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# GLEANINGS

## IN BEE CULTURE



ANNA BOTSFORD COMSTOCK

THE A.I. ROOT CO.  
MEDINA, OHIO.

Western Edition

Entered at the Postoffice, Medina, Ohio, as Second-class Matter

# North Texas Beekeepers

will find Dallas the best point from which to purchase supplies. We have a carload of ROOT'S GOODS in stock, and sell them at Factory Prices. Don't forget that we can furnish anything in the way of field or garden seeds, plants, and poultry supplies. Large illustrated catalog for 1906 free on application. Mention *Gleanings* when you write. Wish to purchase Beeswax.

**Texas**  
**Seed and Floral Co.**  
**Dallas, Tex.**

# SPRINGFIELD MISSOURI

We carry a  
large and complete stock of

## The ROOT'S 1906 BEE-SUPPLIES

All orders filled same day as received, thus insuring for our customers quick service, Springfield freight rates,

## FACTORY PRICES

Send for seed catalog, bulb and plant catalog, Cyphers incubator catalog, The A. I. Root Co. bee-supply catalog

**SPRINGFIELD SEED CO.**  
**Springfield, Mo.**

# MR. TEXAS BEE-KEEPER

I would like to talk to you *personally*.

First, I want you to know about my supplies. I handle Root's Goods, of course; for I believe in giving my customers complete satisfaction—for that's *better* in the long run than low prices. My place of business is on the S. A. & A. P. Ry., just opposite the passenger depot, where I have built a warehouse 40×250 feet, and I have filled it full to the brim, for I handle Root's goods by the carload. This means I can furnish you supplies with the utmost promptness.

Then, too, I have installed a complete Weed-Process Foundation factory. I can turn out 500-lbs. a day. I can work your wax into foundation. In fact, my facilities in this line are not surpassed in Texas.

My can business is increasing by leaps and bounds. That is because of the quality of the goods. It will save you dollars to get my prices. Better write for them to-day.

Nothing pleases me better than for bee-keepers to make their headquarters at my office when at San Antonio. You are *always* welcome. I have fitted up my office with plenty of desks and chairs, with writing material, a reading-table, and all the bee journals on hand. Consider yourself invited.

If you haven't my catalog just drop a postal.

After the 15th or 20th of April I can supply Red-clover and Golden Italian queens promptly.

I am now paying 25c cash and 28c in trade for average clean beeswax delivered here. Save your slumgum. I will buy it. Let me know how much you have, in what condition the slumgum is, and in what kind of an extractor it was rendered, and I will make you price I am paying.

Call or Address

**Udo Toepperwein - San Antonio, Texas**  
1322 South Flores Street

**C. H. W. Weber,**

==== **Headquarters for** =====

# Bee - Supplies.

**Distributor of Root's Goods Exclusive-  
ly, at Root's Factory Prices.**    *o*    *o*

Give me your order for the BEST GOODS MADE. You will be pleased on receipt of them. You will SAVE MONEY by ordering from me. My stock is complete; in fact, I keep EVERY THING the BEE-KEEPER needs. CINCINNATI is one of the best SHIPPING-POINTS in the Union, PARTICULARLY IN THE SOUTH, as all freight now GOES THROUGH CINCINNATI. Satisfaction guaranteed. Send for descriptive catalog and price list. It will be mailed you promptly FREE of charge.

I will buy your HONEY AND BEESWAX. I pay CASH ON DELIVERY; or, if you are in NEED OF HONEY, write for prices and state quantity wanted, and I will quote you the lowest price of any quantity wanted—in cans, barrel-lots, or car-lots—of EXTRACTED or COMB HONEY. I guarantee its purity.

## QUEENS AND NUCLEI.

Let me book your order for queens. I breed the finest GOLDEN ITALIANS, RED-CLOVERS, CARNIOLANS, and CAUCASIANS. Can furnish NUCLEI beginning of June. For prices, refer to catalog, page 25.

I have in stock seeds of the following honey-plants: White and Yellow Sweet-scented Clover, Alfalfa, Alsike, Crimson Clover, Buckwheat, Phacelia, Rocky Mountain Bee-plant, and Catnip.

**C. H. W. WEBER,**

**Office and Salesroom, 2146-2148 Central Ave.  
Warehouse, Freeman and Central Avenue.**

**Cincinnati, - Ohio.**

## Honey Market.

### GRADING-RULES.

**FANCY.**—All sections to be well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel, or otherwise; all the cells sealed except an occasional cell, the outside surface of the wood well scraped of propolis.

**No. 1.**—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside of the wood well scraped of propolis.

**No. 2.**—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

**No. 3.**—Three-fourths of the total surface must be filled and sealed.

**No. 4.**—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

**NEW YORK.**—We still have some demand for comb honey, mostly for white grades, which sells at from 13 to 14, according to quality. There is a very limited demand for light amber, with sufficient supply, and prices ruling at about 12 cts. Extracted is in fairly good demand, with sufficient supply to meet all requirements. Some arrivals are from the South, and common grades are selling at from 50 to 53 per gallon, and better grades at from 60 to 65. California is strong, and white is selling at from 7 to 7½, and light amber at from 6 to 6½. No nearby honey in the markets as yet. Beeswax is steady at 30.

HILDRETH & SEGELKEN,  
82 Murray St., New York.

**MILWAUKEE.**—The present prospects for a good business in well-ripened and fancy-conditioned honey are very flattering so far as this market is concerned, as the stocks from the two years past are practically out of sight, and by the time the new crop arrivals are on sale there will be a healthy demand, and already there is some demand for new. Let shippers be particular in grading and shipping in clean attractive cases in good order, and even quality in each case, and good results will follow. We can not give firm quotations, but may quote fancy comb in glass front, 12 to 24 sections, 1 lb., 16 to 18; extracted, white, cans and pails, 8 to 8½. Beeswax, 28 to 30.

A. V. BISHOP & Co.,  
July 7. 119 Buffalo St., Milwaukee, Wis.

**ST. PAUL.**—At present there is very little honey in the market, and the demand is light. We quote prices as follows: Extracted, 8 to 10; fine white comb, 15 to 16; dark, 10 to 12½.

H. G. ACKLIN,  
July 1. 1024 Mississippi St., St. Paul.

**KANSAS CITY.**—Market on comb honey to-day, \$3.00 per case for fancy white 24 sections, but we look for a better market a little later; no new extracted on the market as yet. Old stock sells at 5½ to 6.

July 12. C. C. CLEMONS & Co., Kansas City.

**BUFFALO.**—If we could get some white-clover comb honey we could get a big price. No white No. 1 in the market; some No. 2, but trade will not buy it except when forced to, and that is seldom, for they would rather wait for new honey. No dark here now. No. 1 old white comb honey, 15 to 16; No. 2, 12 to 14; No. 1 dark, 9 to 10; No. 2, 8 to 9; new white comb honey, 16 to 17; No. 1 extracted, white, 7 to 7½; No. 2, dark, 6 to 6½. Beeswax, 30 to 32.

W. C. TOWNSEND, Buffalo, N. Y.

**ST. LOUIS.**—The crop of new comb honey arrives very slowly, and our market is practically bare of it. There is an urgent demand, quotable as follows: Fancy white comb, 15; No. 1, 14 to 14½; amber, 12 to 13; extracted California, light amber, 6 to 6½; Spanish needle, 6½ to 7; Southern (new), in barrels, 4¾ to 5; in cans, 6 to 6½. Beeswax, prime, 29; all impure and inferior, less.

R. HARTMANN & Co.,  
July 10. St. Louis, Mo.

**TOLEDO.**—The market on honey at this writing would be fair at this season of the year if honey were coming in. There is some call for comb honey and a fairly good demand for extracted honey for table use. Fancy white comb would probably bring 15 to 16c in a retail way. The indications through Ohio and Southern Michigan are that we will have a good crop of basswood honey, but very little white clover, as the late frost seemed to hurt this. Beeswax, 28 and 30.

July 9. GRIGGS BROTHERS, Toledo, Ohio.

**PHILADELPHIA.**—Advices from different points are rather conflicting regarding the crop of honey this season, and, consequently, there is no market price established. Some new arrivals of comb honey sell at 13 to 15, according to quality, and extracted honey at 6 and 7. Beeswax firm, 28. We are producers of honey, and do not handle on commission.

WM. A. SELSER,  
July 9. 10 Vine St., Philadelphia, Pa.

**CHICAGO.**—The market is practically bare of comb honey; and while a little sells at about 15 for the best white grades, there is little volume to the trade. Extracted is in some demand at 6 to 7 for the sweet grades; but off flavors are about unsalable at 5 to 5½. Beeswax is selling upon arrival at 30.

R. A. BURNETT & Co.,  
July 9. 199 South Water St., Chicago, Ill.

**FOR SALE.**—Extracted honey. Write for prices. State quantity and kind wanted. Samples free.

HILDRETH & SEGELKEN, New York, N. Y.

**FOR SALE.**—Superior grades of extracted honey for table use. Prices quoted on application. Sample, 10 cts. to pay for package and postage.

O. L. HERSHISER, 301 Huntington Av., Buffalo, N. Y.

**FOR SALE.**—Old honey all sold except six 5-gallon cans. New honey ready soon; single cans, 7½c lb.; two or more, 7c.

C. J. BALDRIDGE,  
Homestead Farm, Kendaia, N. Y.

**WANTED.**—Fancy white comb and extracted honey. I pay cash—no commission.

WALTER S. POWDER, Indianapolis, Ind.

## STANDARD BRED QUEENS.

BUCKEYE STRAIN RED CLOVER, GOLDEN ITALIANS

By Return Mail. Safe Arrival Guaranteed.

### PRICES

	ONE	SIX	TWELVE
Untested	\$0.75	\$4.00	\$7.50
Select Untested	1.00	5.00	9.00
Tested	1.50	8.00	15.00
Select Tested	2.00	10.00	18.00

Select Breeders, each \$3.00  
Two-frame Nucleus and Red Clover Queen 3.00

THE FRED W. MUTH CO.,

No. 51 WALNUT ST., CINCINNATI, OHIO.

**FOR SALE.**—3000 lbs. very fine clover and basswood honey. Sample and prices free. Also 1000 lbs. white comb honey in 4¼x1½ plain sections.

W. H. TOWNSEND, Hubbardston, Mich.

**WANTED.**—New crop Ohio comb honey. State number cases and price f. o. b. Zanesville, Ohio.

E. W. PEIRCE, Zanesville, O.

**WANTED.**—Comb, extracted honey, and beeswax. State price, kind, and quantity. R. A. BURNETT, 199 South Water St., Chicago, Ill.

**WANTED.**—Fancy white comb honey, also extracted honey in barrels. Send samples, and name best price delivered here. GRIGGS BROS., Toledo, Ohio.

**WANTED.**—Comb and extracted honey. State quality, quantity, and price. JUDSON HEARD & Co., Atlanta, Ga.

**WANTED.**—Beeswax. Will pay spot cash and full market value for beeswax at any time of the year. Write us if you have any to dispose of.

HILDRETH & FEGELKEN,  
265-267 Greenwich St., New York.

**WANTED.**—Beeswax. We are paying at this date for pure average beeswax delivered at Medina or any branch office named below, 27 cts. in cash or 30 cts. per lb. in exchange for bee-supplies, less transportation charges. We can not use old combs. Pack securely and address plainly. Be sure to send bill of lading when you make shipment and advise us how much you send, net and gross weights. Ship to home office or nearest branch named below.

THE A. I. ROOT Co.,

Chicago, 144 East Erie St.; New York, 44 Vesey St.; Philadelphia, 10 Vine St.; Washington, 1100 Maryland Ave., S. W.

**WANTED.**—A case of two 60-lb. cans extracted honey (1906 crop) of each variety or source from every State in the U. S.; also from Canada, Mexico, West Indies, and other accessible countries. With each lot is required a certificate guaranteeing absolute purity of the honey, and gathered from the source named. Exceptional care must be taken to have the honey well ripened, of good representative color from source named. The honey should be extracted from clean new combs free from pollen. An extra price of about 2 cts. per pound will be paid for such honey, or we will arrange, if desired by any, to supply those co-operating and furnishing sample shipments, with ¼-lb. samples of each variety secured, labeled with name of producer, year, and source of honey. We expect to secure at least sixty varieties of American and foreign honeys. Do not ship, but advise us what you can furnish, and on what basis.

THE A. I. ROOT Co., Medina, Ohio.

### JELLY-TUMBLERS AT REDUCED PRICES.

You can double your money from your honey crop by using Jelly-Tumblers of correct style, as containers and keeping your market supplied. No other glass so economical. Write for quotations.

OREL L. HERSHISER,  
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Wholesale Dealers and Commission Merchants in  
Honey, Beeswax, Maple Sugar and Syrup, etc

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### EVANS & TURNER,

Columbus, Ohio,

will be in the market for white comb honey, and especially want some fine stock from Wisconsin, Michigan, Indiana, and New York. They would also like to hear from Iowa producers. Write fully what you expect to have, and if you care to name price, do so, stating about what time your crop will be ready to move.

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DISTRIBUTOR OF ROOT'S GOODS FOR

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**BEEWAX WANTED**

### The Danzenbaker Twentieth Century Smoker

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**A COLD MEDAL**

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St. Louis, 1904.



**UP-TO-DATE,  
STRONGEST,  
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CLEANEST.**

It has a side grate that strengthens the fire-cup, and holds a removable metal and asbestos lining that keeps it cool, adding to its durability. It has no valves to get out of order or snout to clog.

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I have given your Twentieth Century a thorough trial. For convenience in lighting, durability, and long time one filling will last and give ample smoke, I find it all you claim. In the spring I shall want several. I always want the best. N. E. FRANCE, Platteville, Wis.

**SURPASSES ALL OTHERS.**—"After giving the Danzenbaker Twentieth Century Smoker several trials, can say it surpasses all smokers it has been my liberty to try; it will not go out until fuel all consumed, and it produces a cool smoke, a feature very necessary in any first-class smoker." Grant Stanley, Nisbet, Pa.

Prices: By mail, \$1.25; three, \$3.25.

By express or freight, one, \$1.00; three, \$2.50.

For further particulars, see Dec. 15th Gleanings, pages 1370; sent free with price list.

**F. DANZENBAKER, MIAMI, FLORIDA**

## Fruit Growers and Farmers.

Thousands of the best fruit-growers and farmers read the **Southern Fruit Grower** because they find it the most helpful fruit paper published. Contains 24 to 40 pages of valuable fruit and farming information every month. 50c a year. Send 10c and 10 names of fruit growers and get it 6 months on trial. Sample free.

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all summer while prices are low, and sell next winter at a good profit. Write for our plan; it will interest you.

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## GET RID OF LICE.

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# Gleanings in Bee Culture

Devoted to Bees, Honey, and Home Interests

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Editor Home Departments

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# FEEDING BACK

honey to secure the completion of unfinished sections can be made very profitable if rightly managed during the hot weather of July and August. In **ADVANCED BEE CULTURE** may be found complete instructions regarding the selection and preparation of colonies, preparation of the feed, manipulation necessary to secure the rapid capping of the combs, time for removing the honey, and how to manage if a few sections in a

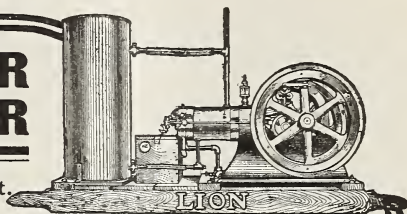
case are not quite complete; in short, all of the kinks that have been learned from years of experience, and the feeding back of tons of honey. Remember, too, that this is only one chapter out of 33 treating as many vitally important phases of bee culture.

Price of the book, \$1.20; or the Review one year and the book for only \$2.00.

**W. Z. HUTCHINSON, Flint, Michigan.**

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Sent free on request, together with other handsomely illustrated literature descriptive of the South and its wonderful resources and progress.

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Gen. Indus. Agt., Portsmouth, Va.

**Seaboard Air Line Railway**

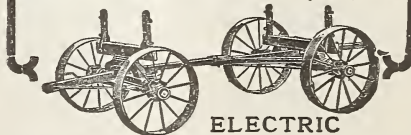
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By every test, they are the best. More than one and a quarter millions sold. Spokes united to the hub. Can't work loose. A set of our wheels will make your old wagon new. Catalogue free.

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Many designs. Cheap as wood. 32 page Catalogue free. Special Prices to Cemetaries and Churches. Address **COILED SPRING FENCE CO., Box 448 Winchester, Ind.**

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# ADVERTISING TALKS

BY THE AD. MAN.

THE VALUE OF PUBLIC DEMONSTRATIONS AT FAIRS, CONVENTIONS, AND PUBLIC MEETINGS, AS A MEANS OF ADVERTISING FOR THE BEE-KEEPER AND HONEY-PRODUCER.

Repeated trials have proven that scarcely any other object will command the attention and interest when exhibited at a public gathering that will be given to a colony of bees in working trim. Herein lies one of the best mediums for advertising which the man who has bees and honey for sale can use.

Now that the season has returned when fairs are being planned for every State and almost every county, the bee-keeper should be making plans for his exhibit. Take a man who sells bee supplies—he should set up in his booth an observation hive and keep the bees before visitors at all times. Passers-by will surely be attracted, and once they stop they will freely seek information which the bee-man should be prepared to give in as simple and clear terms as possible. Show samples of all the various bee fixtures and supplies. All of these will prove of great interest to the uninitiated or inquisitive. Have a supply of little bee-books ready to distribute. Now is your chance to talk personally to an inquirer just as you will wish you could next season when you are corresponding with him. Show copies of GLEANINGS to all who stop. Give each visitor a sample copy. Explain what the purpose of the journal is, and how it is read by more than 30,000 people who are interested in bees throughout the world. Tell of the illustrations which we publish; of the articles calculated to interest every one, from the beginner to the experienced bee-keeper. Say that GLEANINGS is issued twice each month, and that the subscription price is \$1.00 a year. Act as though you really felt that you were offering full value for the money, and your prospective subscriber will have faith in you.

Combination offers of GLEANINGS and the A B C of Bee Culture always appeal to beginners in bee-keeping. Other book combinations appeal to advanced bee-keepers who have the A B C.

Write to us fully if you are interested in fair work. We have had experience which you will value, and will gladly help you out on any problems which you may refer to us.

In this issue of GLEANINGS, Messrs. Prindle & Williamson, Second National Bank Building, Washington, D. C., have a one-inch advertisement. These people are patent attorneys. Their business is to secure

protection for any invention which may be referred to them by their clients. For several years they have attended to the patent work of The A. I. Root Co., and their experience in securing patents for bee-keepers is probably greater than that of any similar firm.

Mr. Williamson has been identified with patents relating to bee culture for twelve years; and, in addition to the publishers of this paper, Mr. Francis Danzenbaker and Mr. J. E. Crane are numbered among his clients.

Patent litigation is a special work, and any of our readers who may be interested in securing protection upon their ideas would act wisely in securing the services of this company.

Every mail brings such welcome letters as the following. Great is the good GLEANINGS is doing, and bee-keepers appreciate this paper, published wholly for their interests.

*The A. I. Root Co., Gentlemen:*—Please find enclosed \$1.00 to pay my subscription to GLEANINGS IN BEE CULTURE another year. GLEANINGS has been a great help to me the past year. I find a great many little things about bees I did not know, and it is just those little things that a fellow does not know that are the ones, at times, he should know how to accomplish certain points.

The A B C of Bee Culture was good, but GLEANINGS is better still, and I do not want to miss a single number if I can help it. Respectfully yours,

CHAS. SCHOONOVER.

Rushtown, O., June 19, 1906.

## LETTER FROM A NEW SUBSCRIBER.

*The A. I. Root Co.:*—June 15th GLEANINGS is best bee literature ever printed. It is because I have practiced successfully several of its "short cuts" and "intense" methods that I now look on 20 years of past experience in bee-keeping (before taking GLEANINGS) with 75 colonies as unsuccessful.

Respectfully, A. J. MOREY.

La Grange, Ill., July 4.

Are you trying to get along without GLEANINGS? Does it pay?

*Gentlemen:*—There's no use trying to get along without GLEANINGS, even though the profits thus far do not justify the expense; so, send it along. Enclosed is \$1.00.

E. R. BURKLEY.

South Haven, Mich May 28, 1906.

Low-down steel wheels are, without doubt, great back-savers for the farmer or bee-keeper. When a man has a big load of feed to carry, or wants to move a lot of bee-hives, he will find that to lift them but a foot or two off the ground means a great saving in time and muscle. Then, too, by putting a big platform on the gear, the capacity of his wagon is greater than that of an ordinary farm wagon or hay-rack. There is a little book entitled "Wheel Sense," published by the Electric Wheel Co., box 95, Quincy, Ill., which will help you in deciding just what you want in low broad-tired wheels. Send for it.

# Successful Bee-keepers

Use the best goods obtainable. This is the secret of the success of ROOT QUALITY. It has for its users more successful bee-keepers than any other brand.

This extract from a letter we received from E. D. Townsend, Remus, Mich., who carries on the most extensive bee-keeping business in Michigan:

*M. H. Hunt & Son, Gentlemen:*—In thirty years Root's goods have been used almost exclusively in my yards with entire satisfaction.  
Remus, Mich., July 7. E. D. TOWNSEND.

Again, a letter from a man whose experiments in non-swarming, covering years of time, and costing many hundreds of dollars, have met with entire success:

*M. H. Hunt & Son, Gentlemen:*—The supplies purchased of you for twelve years have been the very best. As I produce comb honey exclusively, the sections and foundation have proven uniformly first-class and are a guarantee for the future.  
Jackson, Mich., July 9. Your truly, L. A. ASPINWALL.

Again, from a young man who has built up a big apiary in a very few years:

*M. H. Hunt & Son, Dear Sirs:*—Please accept my thanks for the good quality of bee supplies sent me. The best is none too good. That is why I buy Root's goods. Have at present 280 colonies of bees.  
Flint, Mich., July 10. LEONARD S. GRIGGS.

Join the ranks of the successful Michigan bee-keepers, and use Root's goods. We have the largest stock of supplies in Michigan, and can supply you promptly. Orders receive prompt attention.

---

**M. H. Hunt & Son,**  
**Bell Branch, Wayne Co., Mich.**

# A 30c "Trial Trip" The Balance of 1906

## This Offer is Made Only to New Subscribers

to the WEEKLY AMERICAN BEE JOURNAL, and that means to those who have never read it regularly, or at least, have not had it during the past year or more. If you have been a subscriber at any time during the past 12 months we would not consider you a "new subscriber."

On this 30 cent "Trial Trip" offer, the sooner you order (sending 30c in stamps or silver), the more copies you will get for the money, for we begin to send as soon as we get your 30c.

No reader of GLEANINGS should be without the old WEEKLY AMERICAN BEE JOURNAL, now in its 46th year, and better and brighter than ever—so its oldest readers say.

A sample copy FREE. \$1.00 a year, or special trial-trip offer as above. Better order NOW, if you are not already a subscriber. Address

**GEORGE W. YORK & CO.,**

334 Dearborn St.,

CHICAGO, ILL.



## Mr. Bee-keeper

Just a minute of your time, please. Swarming will soon be over and honey coming in. We can send foundation and sections, if you need them, by express promptly.

**The A. I. Root Company**  
Syracuse, New York

# Boss Sections

FROM THE

## Section Bosses

### WE HAVE SECTION BOSSES—

Not the kind you find on the railroad; but genuine, capable honey-section overseers. They are mechanics who have spent a score of years just learning how to make the best sections—LEWIS SECTIONS.

### Years of Study and Constant Vigilance

Over the delicate, intricate machinery means that every crate of Lewis Sections is perfect. Each day and each hour these section specialists personally inspect our machines and examine the output. This keeps Lewis Sections uniformly perfect.

### Ah, that's the Secret!

Now you have it. That's the reason

### Lewis Sections are the Same the World Over

### 15 MILLION NOW READY FOR PROMPT SHIPMENT

At the warehouses of ourselves and our agents as below:

ENGLAND—E. H. Taylor, Welwyn, Herts.  
FRANCE—Raymond Gariel, 2 ter Quai de la  
Megisserie, Paris.

CUBA—C. B. Stevens & Co., Havana.  
C. B. Stevens & Co., Manzanillo.  
CALIFORNIA—Chas. H. Lilly Co., San Francisco.  
SOUTHERN CALIFORNIA—

Fletcher-Doyle Co., San Diego.  
Fallbrook Co-operative Association, Fallbrook.  
Paul Bachert, Lancaster.

COLORADO—R. C. Aikin, Loveland.  
Arkansas Valley Honey-producers' Ass'n, Rocky  
Ford.  
Colorado Honey-producers' Association, Denver.  
Fruit Growers' Association, Grand Junction.  
Robert Halley, Montrose.

IOWA—Adam A. Clark, LeMars.  
Louis Hanssen's Son, Davenport.  
ILLINOIS—York Honey & Bee Supply Co., 141-143  
Ontario St., Chicago.  
Dadant & Son, Hamilton.  
INDIANA—C. M. Scott & Co., Indianapolis.  
MICHIGAN—A. G. Woodman Co., Grand Rapids.  
MINNESOTA—Wisconsin Lumber Co., 432 Lumber  
Exchange, Minneapolis.  
MISSOURI—E. T. Abbott, St. Joseph.  
OHIO—Norris & Anspach, Kenton.  
OREGON—The Chas. H. Lilly Co., Portland.  
PENNSYLVANIA—Cleaver & Green, Troy.  
TEXAS—Southwestern Bee Co., San Antonio.  
UTAH—Fred Foulger & Sons, Ogden.  
WASHINGTON—The Chas. H. Lilly Co., Seattle.

**G. B. Lewis Co., Watertown, Wis.**  
AGENTS EVERYWHERE

# GLEANINGS

## IN BEE CULTURE

A Journal Devoted to Bees, Honey, and Home Interests  
Illustrated : Semi-monthly : One Dollar per Year  
Published by The A. I. Root Company, Medina, Ohio

Vol. XXXIV.

JULY 15, 1906.

No 14



NOT OFTEN do I think of myself as an M. D. Just now, with all the emphasis which that title gives me, I want to endorse most heartily A. I. Root's talk, page 892.

I'VE SPENT no little time trying to see bees on basswood with loads of pollen, and failed; so it's a comfort to have my ignorance dispelled by Doolittle, p. 877, saying, "There is no pollen produced by the basswood, or linden, as you know."

SANE WORDS are those spoken by J. A. Green, p. 873, in his first paragraph. Unless the queen-rearer produces honey on a fairly large scale, or gets his breeders from some one who does, what can he know about the honey-gathering qualities of his stock?

WITH JULY, bees began working on sweet clover and what few basswoods there are, and we're hoping they may get enough for winter. [Then we take it that you have not had any honey to speak of thus far. One of the peculiarities of your locality is sometimes a late honey flow. I hope you will happily be disappointed.—ED.]

REFERRING to your other question, I might have done as well as others at keeping pure Italians; but my best stores were grades, so I bred from them. I rear queens from best stock, as the editor says, and besides that I encourage best drones. Keep that up for a few years, and you'll find it makes a big "worth while."

D. D. FARNSWORTH, referring to your question, p. 889, outdoor bees rear brood a

month or two earlier than cellared bees; so it would be nothing strange if they should sometimes rear a few drones a month or two earlier, even if the editor didn't say so. [I accept your amendment.—ED.]

DOOLITTLE's plan of preventing swarming, which I have watched with intense interest, has now been given entire. He has combined a lot of old things with some new and good ones, and the entire scheme is excellent. [Your opinion of the Doolittle plan of preventing swarming is correct. In localities where there is buckwheat or a late honey-flow, the system will prove to be a great boon. It may work well under other conditions.—ED.]

J. A. GREEN is sound on the nail question (I wanted to pat him on the back for that hint to pick nails out of the grass with a magnet), p. 873; but I want to mention one thing he may not have tried. It is to have 12 or 15 kinds of nails all in the same box. I've tried it (other people mixed them up for me). You can get any kind of nail you want out of the same box — if you dig long enough—but if you don't want to be tempted to swear, never keep more than one kind in a box.

JULIUS STEIGEL, in *Bienen-Vater*, insists that the generally prevailing opinion that sick or imperfect bees are driven out of the hive is entirely erroneous. Instead of that they commit suicide for the general good by leaving the hive to die. The same with superannuated queens. [This may be true; but when the bees can not commit suicide, and can not fly, is it not true that the inmates of the hive carry the cripples out and drop them? It seems to me I remember seeing them do this very thing, especially with those poor bees that have worn themselves out in the basswood flow—wings torn to a point where they could not fly any more, when they are remorselessly picked up, carried aloft, and dropped. Nature knows no

sympathy, no gratitude. The rule is, the survival of the fittest. Any bee that can not contribute to the material welfare of the colony, and has no chance of doing so, must be sacrificed.—ED.]

RAUSCHENFELS tells with much circumstantiality in a two-page article in *Bienen-Vater* of the wonderful effects of the leaves and twigs of lemon (*Citrus medica*), as used for many years in Calabria. Rubbed in the hands and then thrown in front of an empty hive they prove an irresistible attraction to an uncertain swarm. Our California friends can perhaps try it. [I do not take much stock in any kind of scent treatment to attract a swarm of bees to any particular hive or spot. The whole scheme looks too much like the old-fashioned way of rubbing anise seed inside a hive to make a swarm stay.—ED.]

IN GERMANY it is the practice with some who wire frames to rust the wires first by putting them in salt water and allowing the water to evaporate. The rusted wire takes a stronger hold on the wax. [I certainly would not encourage the process of rusting the wire, as this would weaken it, and would not, in my opinion, add very materially to the fastening of the wire to the wax. Then, moreover, it is my opinion that the bees would take unkindly to the rust by showing bare spots of the wire. The bright tinned wire, as we know by experience, they will bury completely, apparently paying no attention to it. They might do so with a rusted wire, but I should fear not.—ED.]

BIENEN-VATER advises that, when freshly extracted combs are to be directly returned to the bees, they should be first dipped in cold water. [This seems to me like a good suggestion. I suppose the wash-water used for cleaning combs may then be converted into honey vinegar or be fed back to bees in an outdoor feeder, or perhaps be converted into the new product, denatured alcohol. I should like to hear from some of our extracted-honey producers whether the scheme of washing the combs as here suggested has been practiced to any extent in this country. If so, I have not run across it in my various travels among bee-keepers, nor even heard of it. Very likely some reader will point out the exact reference. Well, let it come.—ED.]

THAT EXTRACTOR, page 883, has one thing about it radically different from the one tried at Medina. In the French machine both sides of the comb are acted upon exactly alike, while in the Medina machine they were not. Whether that makes any difference in results, I don't know. I don't know about expense; but it looks as though a twelve-frame machine should be built for not more than twice as much as a three-frame one, making it comparatively inexpensive. The trouble with that Medina editor is that he has become so old and conservative that he is prejudiced against any thing new. [Your last sentence is a comfort; and if I thought you really believed it

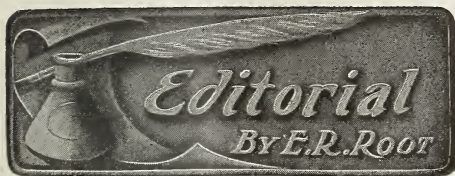
I should be happy a whole week. It seems to me I remember a fellow up in Northern Illinois who used to say I kept bobbing round in new fields so much that he could not keep track of me.—ED.]

G. M. DOOLITTLE, you're a comfortable sort of customer. When I found 9 to 22 degrees more heat in an upper story than in the open air, that only substantiated your claim that no heat escaped from the cluster, page 877. You seem now to hold that it's all right for heat to escape from the cluster when the bees stir. Of course, more heat will then escape because they then make more heat to escape. But according to your theory they ought to hold the heat, even when they do stir up, for you said, "No, the heat from the cluster is not allowed to pass up into an upper hive at any time when that heat is needed for the brood." On that day the outside temperature was never above 58, and surely the heat that escaped was needed for the brood. However, I have tried the experiment again in accordance with your ideas. I arranged the upper story and thermometer in the afternoon, so the bees would have plenty of time to settle down, and at 9 at night I quietly looked, and the difference was 8 degrees. You say there is a difference of 2 or 3 degrees between confined and free air. May be in your locality; but under the laws of Illinois, confinement doesn't make a difference of a fraction of a degree. But allowing 3 degrees for confinement, please tell us how you account for the other 5 degrees.

I DON'T SEE WHAT A. I. Root has been thinking about that he hasn't told us about the fireless stove. We just commenced using it at our house; but so far as we've tried it, it's great. Grandmother Wilson has her oatmeal 365 mornings in the year, and we like to have it thoroughly cooked. Bring it to a boil in the evening and put it in its bed of excelsior without any fire till morning, when it will be found most thoroughly cooked, and still warm enough to eat. [We can go you one better. At our house we have been cooking our cereal foods by electricity. The current goes off at about 10 at night, and comes on anywhere from 4:30 to 5 in the morning. We put the cereal inside of an electric cooker, and turn on the switch before going to bed. If the switch is turned on for half an hour or more before, the cooking process is started. Automatically the heat is applied when the current goes on in the morning, and when we arise for breakfast the food is thoroughly cooked and steaming hot. A current necessary to heat one of these electric cooking-pots is only a little more than that for an ordinary incandescent lamp; and we figure it is really cheaper than gasoline because it is automatic. It is particularly nice in cold weather. But where electricity is not available the plan you give is excellent.—ED.]

IT DAZED ME, just a bit, Mr. Editor, to have you say, page 868, that you and I were nearly together as to that virgin in the Egge

plan. Yes, you said the plan would succeed, and I hand you herewith my apology for hinting any thing to the contrary. I entirely agree with you in your first three sentences, p. 825, but disagree most decidedly when you say, "It is my impression that a queen, when she enters the other hive for the purpose of getting out into the open air to mate, would in many cases supplant the old mother." I don't believe it would happen once in a hundred times. But I see that I laid myself open to misunderstanding. I said, "Enters a strange virgin from another hive. Death-penalty, sure." That may mean death for the old queen. I meant it would be death for the virgin. I'm afraid I'll never learn to express myself as clearly as I should. [My statement with regard to a virgin displacing the reigning queen-mother, was based on actual experience and observation during four years of *queen-rearing* work. Our bee-yard at that time was arranged in such a way that virgins often made mistakes and went into the wrong hive; in a great majority of cases where that mistake was made the old queen was killed and a virgin was allowed. In referring this point to our Mr. Wardell, a man who is one of the best-posted as well as one of the most experienced queen-breeders in the country, he said my statement was not strong enough; that he had raised thousands of queens, and that the virgin almost *invariably* displaces the old queen. I should be very glad to hear from some of our queen-breeders, as to how their experience tallies with ours or the doctor's on this point. I do not seek vindication; but as I am about to revise one of our queen-rearing books I wish to be set right if wrong.—ED.]



MEDINA has been rejoicing in a very fine flow of honey from basswood. The bees have been taking it by storm; and as they fly out over our factory buildings I am reminded of the tremendous roar of bees that poured out from the Alexander yard during the height of his buckwheat bloom.

OUR friends will perhaps remember that some time ago the little daughter of Mr. O. L. Hershiser, of Buffalo, was severely burned by getting hold of some matches. Misfortunes never come singly. We are now very sorry to learn that Mr. Hershiser's little boy suffered a similar accident. As this may prove a warning to other parents we

give an extract from one of Mr. Hershiser's letters that will speak for itself:

Our little boy, 22 months old, had the same misfortune that befel our little girl. A week ago last Wednesday evening he also set his clothes on fire with a match which he lighted. I was in the house at the time; but before I could reach him, both his hands, and his neck in front, and both sides of his face and nose, were quite severely burned, and both ears slightly. His neck under his chin is the worst. None of the burned surface is injured deeply, as the little girl was. We think he will be well inside of three weeks. Marian, the little girl, is still under the doctor's care, and has her arm dressed twice a week. After Marian was burned we provided safety matches, and had all out of children's reach; but the baby reached the fringe of a pin-cushion on a high stand, and pulled it off, bringing a safety-box and a few loose matches with it, and he struck the match on the safety-box just as he had seen us do it.

Buffalo, N. Y.

O. L. HERSHISER.

#### FOUL-BROOD INSPECTOR FOR CANADA.

MR. WM. MCEVOY has been reappointed as foul-brood inspector. He will now be under the Department of Agriculture of the Canadian government. Any one requiring his services will write to the Hon. Nelson Monteith, Minister of Agriculture, Toronto. The suggestion has been made that this should be done early in order that the work may be laid out with the least expenditure of time and money.

#### THE JENKINTOWN FIELD-DAY MEETING.

WE find it impossible to get even a few of the pictures we took at the big field-day meeting in this issue; but we shall get some of them in our issue for Aug. 1. The rest will follow in subsequent numbers.

The day following the big field meeting I took Mr. Doolittle out to the bee-yard and had him go through some of his regular "stunts" in handling bees, showing exactly how he works to economize labor. Two cameras were kept clicking at him, showing each successive operation. It is needless to say that these will appear in GLEANINGS in due time, along with many other interesting pictures taken at the Jenkintown meeting.

#### DROUTH AND TOO MUCH RAIN.

THE season throughout the central part of the United States has been very peculiar. At Medina we have had plenty of rain, and the crops look well; but only seven or eight miles north of us there has been a drouth, and this was not broken till some two or three weeks ago. Eastern Ohio has been having splendid showers; but Tiffin, O., has been in the throes of a drouth. What is true of Ohio seems to be largely true of other States. The showers have been decidedly local. There have been pockets that were as dry as a bone, and other pockets that have been made so wet as to be almost swampy. Almost the entire eastern portion of the country has had almost too much rain — too much in many sections.

#### SENDING SPECIMENS OF FOUL BROOD TO MEDINA—IMPORTANT.

WE must again caution our friends against sending specimens of brood in paper boxes or in a simple paper wrapping. Any sus-

pected diseased comb should be sent in a stout wooden or tin box. Then do not forget to mark on it your name and address before sending the sample. We often have in our office six or seven packages of brood without any mark of identification—not even a postmark.

#### HOW TO DISTINGUISH BLACK FROM FOUL BROOD.

We hope some of our friends who have difficulty in distinguishing between black and dead brood will find these suggestions helpful.

Foul brood is characterized by sunken and perforated cappings of the sealed brood, and by an odor which has been described as like that of a poor quality of glue. The larva, after dying, becomes yellow and finally brown, dries down against the lower side wall, and adheres very tightly so that it can be removed only with difficulty. A dead larva, either sealed or unsealed, will stretch out as far as an inch or more if a wooden toothpick or match is inserted in it and then removed.

Black brood is characterized by sunken and perforated caps of the sealed brood, but most of the diseased larvæ die before ready for capping. The odor is not like that of foul brood, but is more nearly that of sour decayed larvæ. The larvæ, when first infected, have on the body a yellow spot, and move uneasily in the cell. After death they turn yellow, then brown, and finally black, ultimately drying down to a black scale on the lower side wall. Unlike the scale of foul brood this is easily removed. The ropiness, so characteristic of foul brood, is found only to a limited extent.

To diagnose positively some samples of diseased brood, especially in the early stages, requires microscopic examination. All such samples should be sent to the Division of Entomology, Washington, D. C.

#### WHAT HAS THE HARVEST BEEN?

GENERAL MANAGER FRANCE, of the National Bee-keepers' Association, has sent out a report which in the main we believe to be fairly correct. That relating to the honey prospects we take pleasure in giving below:

##### 1906 HONEY PROSPECTS REPORTED TO JUNE 25.

Southern California.—Fair crop—better further north in State.

Texas.—Three crops; two first, failure; last, good.

Colorado.—Light crop; some lost heavily their bees in winter.

Mississippi Valley.—Not half a crop.

Michigan, Ohio, and Indiana.—Half a crop.

Eastern States.—Mostly good reports.

The 1905 crop is about all sold; markets bare; demand good. N. E. FRANCE, Platteville, Wis.

#### HONEY-CROP CONDITIONS UP TO THE TIME OF GOING TO PRESS, JULY 13TH.

I have just gone over the latest reports from all over the country. In the irrigated regions I do not find any thing new to report, except that the crop is very short. In some localities there will be no honey. Southern California, from present indications, will fall considerably below an aver-

age crop in a good season where there were bees to gather it. The loss of bees all through parts of the State has been heavy; and even if the season had been a fair one, the aggregate of honey would have been light. But, nevertheless, there will probably be some honey from Southern California in carlots to go eastward.

Conditions in Illinois are particularly discouraging. I do not remember to have read a single favorable report except from the extreme southern part of the State. Iowa is almost as bad. Strangely enough, there are reports from this State of general drouth as well as reports of too much rain. This seems to be a season of extremes, not only in Iowa, but all over the United States. Indiana, apparently, will get from a light to a fair crop. Conditions in Ohio are improving very much. The central part of the State seems to be suffering from a drouth, and will not recover.

The reports at the present time conflict for nearly all the Eastern States, while those earlier in the season were decidedly favorable; but later reports indicate that the crop will fall short of what was first expected, anywhere from 25 to 50 per cent. In some places there has been too much rain and cool weather; in others, the conditions have been ideal. Pennsylvania generally seems to stand in the forefront for honey-production this year; but even from that State there are occasional reports of little or no honey.

Michigan sends in a great variety of reports—hardly any two alike; but as the season will be late the crop will be better than early reports showed.

The reports from Minnesota and Wisconsin are not unfavorable. The lateness of the season will give those States a chance to come forward with an average crop, perhaps.

Missouri and Nebraska are showing up much better than they did early in the season, for some very flattering reports are now coming from them.

Kansas seems to be suffering from too much drouth. The reports are few and far between, and generally unfavorable.

Basswood, where it exists at all in any of the States, has done exceptionally well. The clover honey of this year will be mixed with basswood more than in average seasons.

#### SUMMARY OF HONEY-CROP CONDITIONS.

The crop of Western honey in carlots will be light. The Mississippi Valley, south of the Wisconsin line, and north of Missouri, will have from one-fourth to one-third of a crop; Michigan, Ohio, and Kentucky, fair; Missouri and Nebraska, good; Eastern States, half to a full crop.

#### PRICES.

There will not be much Western honey on the Eastern markets, except some from California. Scarcity of honey in the Mississippi Valley, together with a shortage of Western honey in carlots, should make prices for table honey in the East fairly firm.

## A FIELD MEETING OF SCHOOLTEACHERS AT MEDINA.

WE had a little field day meeting at Medina on Saturday, July 7. Prof. E. F. Bigelow, of Stamford, Ct. (so well known to our readers), had been lecturing at a summer school of schoolteachers assembled from all over the United States at Wooster, O. On the 7th he brought with him a delegation of 150 strong of these pretty schoolma'ams and manly schoolmasters. He put this aggregation of novices through some stunts in handling bees that fairly made my hair stand on end. You see he had more confidence in our bees and the nerve of the schoolma'ams than I. I worked the camera; but every minute I expected a stampede of bees, feminine beauty, and masculine strength all mixed up in wild confusion. No dire calamities happened, fortunately, and every thing went off like clockwork.

## MRS. ANNA B. COMSTOCK.

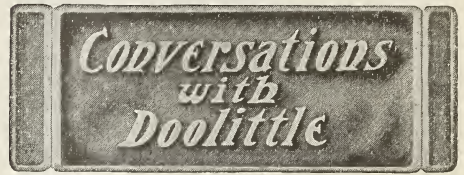
SOMETHING like 25 years ago, through an old college chum, E. H. Sargent, then at Cornell, I learned of J. Henry Comstock, professor of entomology at that university. Through this friend, the professor became interested in bees, and it was not long before some very pleasant correspondence sprang up; during the course of which he sent me a copy of "A Manual for the Study of Insects; Designed for Use in Colleges. By J. Henry Comstock and Anna Botsford Comstock," his wife. In relation to the last-mentioned personage, Prof. Comstock says that, "although the chief work of the junior author has been with the pencil and graver, many parts of the text are from her pen," and that the "plan of the book was changed after she finished her writing." It appears, then, that Mrs. Comstock, besides being an entomologist, is an expert wood engraver. The many beautiful engravings all through this work testify to her ability in this line. Some of the plates, indeed, will equal if not surpass some of the work of the best wood engravers of Germany.

In the mean time it appears that Mrs. Comstock began to study bees with her husband; and the measure of her enthusiasm, and success as well, may, perhaps, be understood when we take into consideration the fact that she is the author of one of the most charmingly interesting books on bees that was ever written, entitled "How to Keep Bees."\* One would naturally suppose it to be on the scientific order; but so far from being a work of that nature its every page gleams with practical bee lore enlivened with a catchy enthusiasm. The book does not pretend to be an authority, but delightfully portrays the experience of a lover of bees. It is written especially for the beginner. A review by A. I. Root appears on page 743, 1905.

\* For sale at this office, \$1.10 postpaid. See further notice on page 959.

We are glad to give a half-tone of Mrs. Comstock on the front cover page of this issue, and I think we may indeed class her among the leading women bee-keepers. She is the only woman, so far as I know, who has ever written a book on bees; not only that, her articles have appeared in a number of the leading magazines, accompanied by some beautiful illustrations.

We requested her to give us an article on the subject of "Women and Bees," which, owing to lack of space in this number, will be given in our next. It is so bright and breezy (like all of her writings) that our readers, especially those of the feminine persuasion, will wish to read it.



## DRONE COMB, ETC.

"Say, Doolittle, I am in trouble. Can you help me out?"

"Well, I can tell you better when you tell me what your trouble is."

"It is like this: I had the misfortune to lose quite heavily in my business last winter, and so I did not feel able to purchase comb foundation for my new swarms this year. For this reason I concluded to have my swarms build their own comb this season; but they are making a sorry job of it, in that half or more of the comb which they build is of the drone size of cells. Can you tell me why my bees build this size of cell, and what I can do to avoid their doing so?"

"Allow me to ask you a question. What has been the honey-flow since swarming commenced?"

"Excellent. I never knew it better."

"That is as I expected."

"What has that to do with the drone-comb matter?"

"Let me explain a little. All observing apiarists know that, as the day for swarming draws near, the queen ceases her prolificness, so as to be able to fly and go with the swarm; so that, when the swarming does occur, said queen is scarcely larger than a virgin queen. Nature has so ordained things for two reasons, the first of which is that the queen can fly and go with the swarm, for, if taken from the colony when no such preparation has been made, she can not fly at all, as she is so heavy with eggs. The second reason is that the queen need not be damaged by an over-accumulation of eggs before there is time for the bees to construct comb in the new home for her to deposit her eggs in. For this reason we find that all good queens do not become fully

prolific again until about a week has elapsed after the new colony has arrived at its new location. During this week comb has been built very rapidly, especially if honey is coming in plentifully and the swarm was a large one, while (for the reason given above) the queen has not been able to keep up with the workers, the result of which is that the bees commence early in their operations to build store comb, which is always of the drone size of cells. This comb is mainly filled with honey at this time, although the queen quite often fills a part of it with drone brood, especially an old or failing queen doing this. The main trouble comes, however, the next year, when, after the honey has been removed during the winter and spring for food, the queen fills such comb with eggs, thus rearing a useless horde of consumers of honey, instead of thousands of workers to gather the harvest later on."

"That helps me to understand the matter, for the colonies which built the most drone comb were those having my oldest queens; and when the honey-flow was the best, the swarms having been hived a few days previous built more of this drone comb than did those coming a little earlier when honey was not so plentiful."

"There is no question about this matter of the *why* bees build drone comb for the majority of bee-keepers who do not use comb foundation when hiving swarms."

"Well, how can this drone comb be avoided under these circumstances?"

"The way I manage is to have all swarms in a hive having the full number of frames the hive contains, all having starters consisting of a half-inch-deep strip of foundation, and leaving them thus for one day till they make a start at comb-building, when the hive is opened and all but five of the frames taken out, leaving those which have the most comb built in them, using dummies to take the place of the frames removed."

"Why don't you put the dummies in at the time of hiving?"

"Because the bees are quite apt to swarm out with so small a brood-chamber, unless they make a start great enough to consider this as their permanent home."

"I see. Go on."

"Having the swarm on five frames, one super of sections is given, which should contain a few sections having partly built comb in them left over from the previous season, while the others should be filled with the extra-thin foundation for comb honey."

"Why is this?"

"This gives the bees plenty of room above to store honey, thus not crowding them in the contracted brood chamber, so that only comb of the worker size is built below, and that only as fast as the prolificness of the queen demands it, for the bees can occupy all their energies not needed below, in the super which we have given them. As the queen's ability for laying increases, more comb is built, which she at once fills with eggs, and thus all keep pace together, till at the end of two weeks we have the five

frames full of all worker comb, and the sections nearly completed as well."

"But you give more than the one super, do you not?"

"Yes. As soon as the first is from one-half to two-thirds full, it is raised up and another put under it, if the season is proving good. If bad weather comes on, then the last-named super is put top of the first, so that they can have plenty of room if they need it; and if otherwise, then the sections in the first super are generally completed, which they would not be likely to be where the season proves poor and we put the empty super under."

"That is a good thought, but I wish to know the result of this way of working."

"By the above plan I secure three important items—lots of section honey in a good year (some in a poor year), no drone comb, and five frames of nice worker comb, the latter costing less, according to my estimation, than the price of the foundation to fill those frames, saying nothing about putting it in the frames."

"But these five frames do not give a capacity great enough, nor stores sufficient for the colony to winter on, do they?"

"No. I am glad you spoke of this part. When the harvest of white honey is over, the dummies are taken out and the hive filled with frames of comb if I have them; and if not, then with frames of foundation; but the combs are much to be preferred."

"Then it is necessary to buy some foundation?"

"I consider it better to buy some and keep it on hand for emergencies, but it is not absolutely necessary; for by making nuclei, or having a few weak colonies, they can be kept building comb during the whole season, at all times when honey is coming in from the fields sufficiently to cause them to build comb."

"And will such little colonies always build worker comb?"

"Yes, if they have a young queen, and you do not give too much comb room."

"How much is the right amount?"

"I generally use about two quarts of bees, giving them one frame containing mostly honey and one of brood, putting the empty frame between the two; and as soon as that frame is filled then I put two more empty frames in, placing them between the three filled ones. These they will fill with comb nearly as quickly as they did the one."

"When you have the five full, what then?"

"The three which have been built are taken out, the bees shaken off, and one empty frame given as at first, unless the nucleus has grown materially stronger, when two are given, putting both between the two combs we have left them."

"What do you do with the combs of brood you take away?"

"They are used to take the place of the dummies taken out from the swarms hived on the five frames, when I use this way of getting combs."

"Ah! I see. But I must be going."



#### WINTERING AT ROOTVILLE.

We have all been interested in the results of wintering bees at Rootville, both indoors and outdoors, regarding it as a sort of experiment station, you see; but it seems a little queer that in a cellar too warm that the weakest colonies should have died while the strong ones suffered least. I have fancied that weak colonies required a much higher temperature to winter well than strong colonies, and on the other hand strong colonies could endure a much lower temperature than weak ones. As a strong colony generates considerable heat I should suppose such would be the first to suffer. Perhaps you can explain how this is.



#### BOTANICAL TERMS.

In GLEANINGS for April 15 is a very enjoyable article on "honey-bees and cucumbers." I was the more interested, as considerable quantities of bees have been sold from the county in which I reside to go to the hot-houses around Boston to assist the cucumber-growers of that section in the production of this vegetable. But the beauty of the article is sadly marred by the blunders, or what appear to be, of the writer. He seems to have gotten stamens and anthers and other parts of the flower mixed in some way.

Near the top of the second column, page 509, he says, in trying to explain the process of fertilization, "Take, for instance, an apple-blossom. We find in it the stamens with their corresponding anthers. While it is true that the winds will, in a measure, carry the pollen from the anthers to the stamens, yet it is very imperfectly done."

The anther is a part of the stamen, and any amount of pollen carried to the stamen below the anther would never produce fertilization. It is necessary that the pollen be carried from the anthers to the stigma of the pistil to produce fruitfulness. I thought at first it must be a typographical error; but just a little further on he says of the bee, "But as it buries itself deep in the blossom it carries on its downy body the fertilizing pollen, which it transmits to the stamens," which is absurd in the extreme. The bee transmits the pollen to the pistil.

Of course, any one familiar with this subject would know what was meant by the writer or what he should have said; but for the many who may not have a technical knowledge of the different parts of flowers and their uses I feel that this correction is due.

#### THE VALUE OF SPRING FEEDING AS A PREPARATION FOR THE HONEY-FLOW.

The articles by E. W. Alexander have proved very interesting and valuable, and I hope they may be placed in permanent form for easy reference. Aside from direct information on many subjects, the sidelight thrown on some other points gives them great value. We have wondered how he could support such an immense yard of bees in one place without overstocking. His method of feeding, when flowers are not yielding honey, in a large measure explains the whole thing. To illustrate, take a clover section like the one where I live. Our whole reliance for surplus is clover, which is usually abundant; but unless bees get a good start before it comes into bloom it goes by before they can gather much surplus; but if bees are fed so as to be strong when it begins to yield honey, a good crop is secured, and the number of colonies kept in one place may be largely increased without danger of overstocking, and the extra amount of honey secured will many times repay the cost of extra feed.

I remember some thirty years ago, before I had learned the value of early brood-rearing or the art of securing a strong colony in time to gather the crop of honey as soon as it appeared, nearly all my colonies were short of stores, while many of them were weak in numbers also. I thought that the strong colonies could take care of themselves, but the weak ones I must feed. I fed them, but left the strong ones to shirk for their feed. When clover came into bloom I found those that were strong early were almost without brood, and fast getting weak, while those that were weakest in early spring were my best colonies, and gave me very much the most surplus honey. Had I been a stranger to the resources of our section I might have thought we were overstocked. I believe that, by judicious feeding when flowers yield little honey, the number of colonies in any given section may be very largely increased—I think it safe to say doubled, without any danger of overstocking.



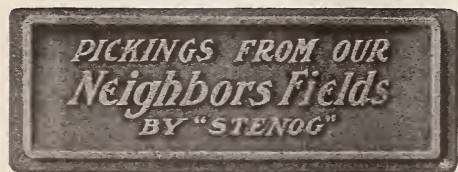
#### DR. MILLER CORRECTED; WHY I USE PLAIN SECTIONS.

Under the topic of plain sections vs. bee-way sections, Dr. Miller makes some good points. There is quite a difference in different colonies as to the evenness with which they fill their sections. Especially is this true in regard to a weak or strong colony. There is also, as he says, a difference in different seasons; but Dr. Miller seems to have misunderstood my position, and the editor of GLEANINGS as well, judging from the footnotes on the article from my pen in the Christmas number of GLEANINGS. I do not use a simple slatted separator with parts to engage the edges of the plain sections, but use instead a separator with small projections on each side to engage the edges of the plain sections, thus giving the bees a

chance to go between the edges of sections and separators, and so giving them a chance to pass laterally from section to section, the principle being very similar to the Hyde-Scholl separator.

It is true that I have never tried one half of my bees with one kind and one half with another; but I did test them—I mean plain sections with separators with a part of my bees—before adopting them. One of the most serious objections to using them, as it seemed to me, at first, was that weak colonies would not finish up as many sections as with the old style of section and separator. With the old style, a colony not very strong would go up into a clamp, and very often finish several sections near the center of the clamp, leaving the rest almost untouched, while with the new plain section and separator they would start many more than they finished, owing to the freedom or “get-at-ability” of the sections, as it seemed to me. But this objection is much more than balanced by the evenness with which they fill them. With these separators there are no naughty corners; but, instead of a post to bump their heads against, a clear passageway around the edges of sections—see? I should now be very unwilling to go back to the old style of sections, because I know I can put up my honey in better shape than any of my neighbors with two-beeway sections. When I first got up, or began using, this style of separator, which was fully illustrated in GLEANINGS, at the advice of E. R. Root, I applied for and secured a patent on it, but have not felt like booming it till I had fully tested it. I can now give it my full indorsement.

Middlebury, Vt.



A prominent bee-writer in Bohemia says, in some foreign journal which I can not just now find, that he has much better success in introducing queens at dark, when the bees are all in the hive, than in the day time. He thinks that light makes the bees more nervous and irritable, while darkness makes them more kindly disposed and reasonable. Just how much there may be in this remains to be seen; but perhaps it is well worth considering.

The *Scientific American* takes a correspondent to task for writing to them with a leadpencil. While it may at times be impossible to use a pen and ink, it is certainly better to do so, especially as a pen is so much easier to use. Writing should al-

ways be on ruled paper. Some of the most objectionable writing editors get is where the top of one line is written over the under half of the line above, clapboard fashion. Please allow plenty of room between the lines; and if you use a typewriter, leave every other line blank. Never send any thing to press until you have read it carefully to supply the missing words; and then let some member of the family read it to supply the words you have left out. Many writers would be surprised to see how careless they have been in the preparation of their manuscript.

*The Apiarist* is the name of a new bee-journal, the seventh number of which is before me. This being the first number I have seen, it will account for the fact that no mention has been previously made of it, as such work has been referred to this department of late years. This new candidate for apicultural support has 24 pages, well printed, and the subject-matter is well chosen. It is edited by Mr. C. S. Phillips, and published by John Bradley, at Waco, Texas. The price is \$1.00 a year, and the journal is well worth it.

Our old friend Mr. L. Stachelhausen has charge of the Question and Answer Department, and in answer to the old question as to whether bees move eggs or larvae from one cell to another or not he says:

For many years, once in a while somebody has asserted that he has made observations which were positive proof that such transportation takes place. During the last few months even such celebrated bee-keepers as Alpaugh, Holtermann, and Pettit answer yes to this question. Nevertheless I am skeptical. Pettit thinks it is not probable that bees could move larvae. Hasty says: “They are probably capable enough of moving either one.” When an egg is laid by the queen its point is glued to the bottom of the cell; and if it should be removed the egg shell would break, its contents float out, and so the egg would be destroyed entirely. For moving young larvae it is hard to understand how the bees would proceed. I will not say that a transportation of eggs or larvae from one cell to another one by the bees is entirely impossible, but it is not very probable. In my bee-keeping experience of nearly 50 years I have never had occasion to observe a case of this kind. Of course, this is no proof at all against the possibility; but I have observed some cases very similar, which were explained in a different way afterward.

As Mr. Stachelhausen is a very careful observer, his opinion certainly has some weight in deciding such a matter.

A list of the principal honey-producing plants of Texas, by Albert F. Conradi, is of special interest. In speaking of yellow sweet clover, Mr. Conradi says:

This plant is reported to occur along the Colorado River. Its distribution in Texas is indefinitely known. It blooms during May and June, and is a fine honey-yielder. The honey is claimed by some bee-men to be superior to the white sweet clover. It grows on many varieties of soils, and would probably make a good honey and forage plant for the poorer soils of the humid sections of Texas. Experiments in growing this plant on the poor soils at the experimental apiary at College Station indicate that it is worth while for all bee-men to try it. In a letter dated May 12, from Mr. C. S. Phillips, editor of *The Apiarist*, he states that, three or four years ago, he sowed seed at Waco, and the plant is now rapidly spreading, there being “nip and tuck” between it and Bermuda grass, and, according to present indications, he believes that both the yellow and white sweet clovers will master the Bermu-

da. Mr. Phillips furthermore says that the bees do not work it like the white species; that, while the yellow is about through blooming, the white will continue to bloom until fall, provided there is sufficient rain. These clovers are valuable for late winter and early spring grazing. The plant prefers lime soils. However pleasant the odor to people, stock must become accustomed to it before the plant is relished for forage.

We shall gladly welcome *The Apiarist* among our exchanges.



### SUCCESS IN BEE-KEEPING.

Some General Considerations that Conduce to that End Covering the whole Season.

BY E. W. ALEXANDER.

How that word "success" seems to fire our very souls with ambition! and we again and again think our business over, each time trying to solve some new problem whereby we can add still more to our income and at the same time reduce our expenses. There are two things that always bring success—that is, good seed sown in fertile soil; and that law of cause and effect which predominates in all things, affects our business all the way through. There is no question that bee-keeping, if rightly done, is fertile soil; and it rests with you, my friend, to inform your mind and adopt methods whereby you will become good seed to develop in that soil.

You undoubtedly have had experience enough to know whether you like bee-keeping or not. If not, then sell out and take up something else; but if you like the business, then "Stand not upon the act of your going, but go at once" with a determination to succeed. Work at it by day, and think of it by night. Aim high, and use all the skill you can command to make it a success; get bees of the best honey-gathering strain you can find, for honey is what you are working for; let all other things be secondary to that. If they sting, make the best of it. If they swarm too much, try to curtail it; but get the bees that will gather honey by the ton; then you will be on the main road to success.

#### THE DIFFERENCE IN COLONIES.

There is as much difference in the amount of honey that different colonies will produce as there is in the amount of butter that different cows will make; so don't waste your time on any poor stock. When you have the best, give them good care and you will be surprised at the results. Look upon every colony as you would an individual whom you had hired; then see that each one contributes its part toward producing a fine surplus.

After you once get your colonies strong in bees, keep them so during the whole year. This can be accomplished to a great extent by keeping only good young well-developed queens. See to it that they continue to breed well into the fall. This can be done by a little feeding.

#### WHEN TO PUT IN AND WHEN TO TAKE OUT OF WINTER QUARTERS.

In this cold climate I would advise putting them in their winter-quarters about the first of November before they have lost many bees by hard freezing weather. As a general thing I think waiting for a chance to fly in November is a bad practice. If you winter in a cellar, and can keep the temperature about 45, it makes but little difference how damp the cellar is, providing you have a good mat on top of every hive; or a good piece of heavy duck will answer if you have not the mats, and then raise them about an inch off the bottom-boards all around.

Don't take them out in the spring until there is something for them to work on. We have noticed for several years that the first colonies we put into the cellar are the last to be taken out, and they are our best colonies nearly all summer. Heretofore there has been about ten days' difference in the time of putting in the first and the last, and about the same length of time in taking them out. Now we have a new cellar in our bee-yard so handy that two men can put away nearly 800 colonies in a day, and disturb them but very little.

In regard to this wintering problem, in order to be successful there are a few things that must work in harmony together. First, good stores; total darkness; perfect quiet, and an even temperature of about 45. If any of these are lacking it may be necessary to give them a chance to fly earlier than we otherwise should, in order to save them from wasting away badly in the cellar; then when spring comes, do all you can to keep them warm and promote early breeding.

At this time they require man's help more than at any other time of the year; and if you expect to be successful, there must be no let-up until every hive is crowded full of bees and maturing brood. Yes, I mean all that that implies, and a great deal more; for you should now have a fine lot of young queens ready to make whatever increase you may desire; but if you do not understand rearing good queens then you had better buy what you need from some party that can be relied on to furnish you good stock.

#### DON'T BARREL HONEY DIRECT FROM THE EXTRACTOR.

Now as to barreling up extracted honey, as some advise, right from the extractor. This is something I can not endorse. If you are very careful it might do; but with some careless honey-producers it is liable to do much harm. Even if of good quality when extracted there will be a little scum rising to the top after a few days. This, if left in the barrels, gives it a bad appearance, and many times hurts its sale. Then if there

should be a little thin honey in the barrel this will also rise to the top and have a tendency to ferment. Here is one of the reasons why we have always used large storage-tanks. With them, whatever rises to the top can easily be skimmed off; and in drawing off from the bottom of our tanks we get only the thick pure honey of the finest quality. We are sure that, in giving this part of the business special attention, as we do, it has much bearing on the ready sale we find for all we can produce. If you expect to make bee-keeping a success, you must look close to all these things. Don't be afraid to give a dollar's worth of good honey for every dollar you receive from a customer; for if you are, your customers will soon find it out.

#### BEE-KEEPING AND OTHER SIDE LINES NOT ADVISED.

In regard to running some other business with bee-keeping I must say I don't think much of it. If you want a larger income, just add on one or two hundred more colonies. I don't know of any thing so nice to go with bee-keeping as plenty of bees. Some are so slack that a large per cent of their colonies give them little or no surplus. This is all wrong, and shows that their owner is not caring for them as he should. The idea of having 100 colonies, and getting surplus from only 75, is on a par with box-hive apiaries. It is now high time that we get away from that slipshod way of caring for our bees. Don't let one single colony sulk away its time. If they will not work without it, take away from them all the honey they have, and then let them work or starve. Sometimes we have swarms that have to be treated in this way. We don't keep bees for the fun of lugging them out and in the cellar spring and fall, and what stings we can get through the summer. We care for them simply for the dollars we can get for their surplus honey; and if we don't get some from every colony we know it is our fault. My advice is, just as soon as you find a colony that is not doing well, attend to it at once. That is your business. Either put it in a shape so that in a few days it will be all right, or unite it with another. If you don't want to do this, put it with your nuclei, and consider it one of them. I frequently find bee-keepers who allow far too much drone comb in their hives. It is certainly much better to restrict the rearing of drones to two or three colonies than to allow many thousand drones to be reared in the place of worker bees. This one thing of itself often makes the difference of several pounds of surplus in many of our colonies. It will pay you well to bear this in mind.

My friends, in the above you will find a few of the many necessary things spoken of that make bee-keeping a success. Please weigh each one separately, and in doing so make all the improvements you can; for it is my hope that you will some day enjoy success in bee keeping.

Delanson, N. Y.

[When I visited Mr. Alexander it was evident that he practices exactly what he preaches in the foregoing. His colonies are all uniform — so much alike in working capacity that there is scarcely any difference in the flight at the entrances that could be detected. Besides being uniform in strength and working capacity they were all very strong, with the exception of a very few where he was rearing queens or making some experiments.

This article may serve further to show why it is and how it is Mr. Alexander is able to extract without using the uncapping-knife. When it is remembered that he waits until the bees begin to cap the honey over; that buckwheat honey is very thick in his State; that he allows it to ripen further in shallow tanks, removing any scum or impurities that may have risen to the surface meantime, and when it is remembered, too, that he draws the honey from the *bottom*, drawing off only the thick honey, it will be seen why he can practice extracting without using the uncapping-knife, wherein in the majority of cases, and in the majority of localities, it would be advisable to wait until the honey is fully capped. In this connection I wish to say I believe that the great mass of bee-keepers, unless they have *proved* that they can do it safely, had better not extract any honey that has not been covered with capping — especially so if no evaporating-tanks are used, as do Mr. Alexander and others who extract the honey before it is fully capped. — ED.]

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#### THE IMPROVED UNCAPPING-KNIFE.

How to Hold and How to Use; the Value of a Longer Knife.

BY E. D. TOWNSEND.

Some time ago I received a sample of Bingham's uncapping-knife from The A. I. Root Co. to test. The blade is the same as usual, only an inch or thereabout longer than the regular. The handle is the Cogshall idea, being flat on the top and bottom, as the knife lies on the table, and is also planed off on the edge next the shank, so there is a flat edge where the thumb comes when taking hold of the knife when using.

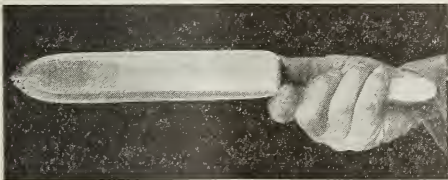
And now, Mr. Editor, I will say a few words about uncapping and uncapping-knives. We have felt the want of a longer uncapping-knife for several years, but have been loath to ask for it for fear this extra length would make the knife unwieldy, or, in other words, every little we add to the blade in length we lose in leverage. I wish I could have used this knife with the blade an inch longer than the regular, one season before passing an opinion on it. Our extracting-frames are all the Langstroth size, mostly with  $\frac{3}{4}$  inch deep top-bars; but a part are only  $\frac{1}{2}$  inch deep. This, after figuring out the bottom-bar, leaves from 8 to 8 $\frac{1}{2}$  inches of comb surface. Eight of these combs are

used in a ten-frame body. In our extracting upper stories this wide spacing,  $1\frac{1}{2}$  in., makes great plump fat combs. Now, to uncapp, set the comb to be uncapped on end, on the usual sticks, over the uncapping-tank, with the edges of the comb toward you, held in position with the left hand. We start the knife at the lower end of the comb to be uncapped. At this stage the comb, for convenience, will stand on a slant to the left. Now begin the upward movement of the knife, back and forth, endwise, with a seesaw motion. This makes the knife cut more keenly. Now, about the time you see the cappings are going to fall off the knife, with the left hand push the comb to the right until it stands perpendicular. If you are now holding the knife at the correct angle, the beveled edge on the knife being on a level with the comb after it is uncapped, the lower edge of the knife will be an inch or so off from the uncapped surface, so the cappings will clear the comb and fall direct into the uncapping-tank below. Uncap deep, clear down to the frame.

I am convinced that the best honey could be produced by using nothing but foundation in the upper stories to extract from; but as this is impractical the next best thing to do is to uncap *deep* so the comb, when given to the bees to be refilled, will be, say, one inch thick. This leaves the cells only  $\frac{1}{2}$  inch deep, and is the *next best* to foundation. Then by  $1\frac{1}{2}$ -inch spacing the combs uncap very nicely, and I never could see but the honey was just as good as if more combs were used in the upper story—i. e., closer spacing.

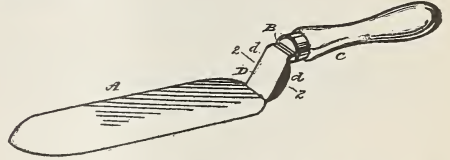
Keep moving your knife up, with the drawing motion mentioned above, until you go the whole length of the comb; and if you have done a good job, and there were no indentations or unusually rough surface, your comb will be finished with one stroke of the knife.

And here let me say, no one will ever go back to narrow spacing after once trying wide spacing; but don't forget to uncap *deep*. This leaves your combs the regular thickness when extracted, and I think the honey will be of a little better quality in these thin combs.



I think that, after reading thus far, it will be easy to convince the reader how handicapped we have been with the regular short Bingham knife as it has been manufactured heretofore. Of course, those who still practice close spacing will need the regular knife. That brings me to a point. We shall need two knives—the new long broadside knife and the “regular” knife. I inclose a

photograph showing the proper way of taking hold of the knife. The hand is turned up in order to show more clearly the arrangement of the fingers. The thumb and first finger grip clear down on the shank of the knife; in fact, the first finger projects down by the blade  $\frac{3}{4}$  inch or so, while the thumb goes clear down and rests firmly against the blade, near the shank. This way of taking hold of the knife gives one very much better leverage than he can get by taking hold of the handle only.



You will notice that, with this grip, the handle can be made shorter when I prefer. Instead of cutting out that part of the material between the blade and where the shank turns into the handle, leaving, say,  $\frac{3}{4}$  inch there, and turning it back toward the handle as shown at *d*, in the drawing, so as to make a wider and better grip for the thumb and first finger, as the narrow edge of the shank is a little sharp, and hard on the first finger. You will notice that, with the first finger clear down to the bottom of the shank, one has a very great leverage over taking hold of the handle only; and as one adds to the length of the blade, as the new knife will be, he needs all the leverage possible.

This matter of uncapping-knives and *how* to uncap is getting to be very important, since the tendencies of the time are in favor of leaving the honey in the hive until it is all capped and cured, before extracting.

Remus, Michigan.

[We are making arrangements to put on the market another year, if the trial test in the hands of practical honey-producers justifies it, a honey-knife like that shown in the illustration above, having on the shank a semicircular finger-piece flange on each side. When the knife is held as in the lower illustration the thumb and fore finger get a good solid comfortable bearing on the broadened edges much better than with the thin knife-edge shank of the regular style of knife. This thumb-and-finger shank will in nowise interfere with handling the knife in the old way; but it is obvious that, the closer one can get with his hand and fingers to the blade, the greater leverage he will necessarily have, and less strain on the wrist. If the blade be longer it is much more important to get closer to the work.]

The Coggs shall flattened handle will also probably be used in connection with this turned-over edge of the shank, or that portion between the handle and the blade. The user then can grasp the tool in any fashion that he desires.

It is hardly necessary to state that Mr. Townsend is one of the most extensive honey-producers in the United States, and

one of the most practical. Our assistant editor, Mr. H. H. Root, is now on his way to Mr. Townsend's to test a power-driven extractor outfit. The motor will be of the gasoline type, of special construction.

We have been working on this problem for some two or three years, and now think we have it nearly solved. But in order to *make sure* of it we propose to go into the field where actual conditions are met. —ED.]

#### REMOVING COMBS FROM THE HIVE FOR EXTRACTING.

How to Drive a Large Part of the Bees out of the Supers with a Smoker; the New Bee-brush, and How to Use it.

BY R. F. HOLTERMANN.

In how many apiaries throughout the land does the season for extracting become a season of dread? Time was when it was the same to me; but long experience and careful observation, and pointers from others whom I have met at conventions, and the reading of articles in bee-journals, have changed all this; and now we often extract in out-apiaries in buildings very far from bee-tight. During the robbing season we extract all day, and for years have not been compelled to stop work. To go into the details of management to accomplish this will necessitate another article. The present is simply to cover the removal of combs from the hive to the bee-house.

We work in pairs, the least experienced doing the smoking, although to smoke bees "to perfection" requires great skill, close observation, and faithful work.

The next hive to operate upon is smoked while we are about to open a new hive. Smoking is done through the ventilator which has been described and illustrated in my hive. To smoke the bees at the entrance is to drive them into the super. The hive is not jarred, but handled carefully. The cover and cloth or honey-board are removed from the super, and the bees smoked. A swinging motion of the smoker throwing the smoke between the combs from end to end is far more effectual to drive the bees down than to smoke in the usual circling motion, and largely across the combs. If there are two supers on the hive, the combs are taken out of the first super, shaking the bees in front of the hive, but so far in front that they are not likely to reach the brood-chamber before the super next to the brood-chamber is being operated upon. We work quickly but not *roughly*. Let movements be rapid, purposeful, but not nervous. We avoid crushing bees; and by having straight combs and using a little careful judgment we have no trouble about crushing bees. I now catch hold of the top-bar ends with thumb on one side, fore fingers on the side-bar and the rest of the hand on the other side of the frame inside of the hands, facing each other, and make a quick shake followed by a rapid reversal in motion, and

another quick shake down, done in less time than it takes to describe it, and yet the bees have had three attempts to dislodge them, followed in rapid succession. To hold a heavy comb by the top-bar lugs alone would break the lugs in many cases; but by also pressing on the side-bar, much of the weight is taken from the lugs. I also find that the staples driven into the top-bar weaken the lug, and they are more liable to split off. Your metal spacers would have the opposite effect. Unless with some strains of Italians, I find, after such shaking, but few bees upon the comb. Whatever is left upon the comb is brushed off.

For twenty-five years I have tried almost if not every thing recommended as a brush if within reach, and some things which had to be purchased a long way from home. A turkey feather and wing, or a goose wing, was the first. I find these too harsh. There is not give enough to them; and even with an experienced hand the bees are likely to be more or less crushed or rolled under the feather, and they will fight the feather. I have seen the bees do it many a time. Asparagus and weeds do not last, and are too irregular, and much time is lost in looking for more. The Cogshall bee-brush, which should be used only at the end, has sufficient play, but does not cover enough surface at a sweep. The Dixie bee-brush is all right at first; but when it has been put in water it hardens, and when in use becomes tangled. However, I prefer it to any of the above-named articles.

More than a year ago I saw cataloged a German brush, and sent for two. It is a hair brush. Water has had no effect upon it. The hairs are long enough to be pliable and not crush the bees if caught between the brush and the comb. There are neither too many nor too few hairs in the brush,



THE GERMAN BEE-BRUSH.

either being a defect. With that brush we brushed at least comb surface enough to contain 30,000 lbs. of honey, 60,000 lbs. being one crop. I showed the brush to many, the editor of this journal among the number, and it looked, aside from a dulling of the paint on the wood, about as good as new. Even when used by a novice, as it was many a time, we never saw the bees try to fight it. It was shown at conventions here in Canada, and many wanted to buy one like it, among them some of our very best-known Canadian bee-keepers (I have none for sale). I never used a brush its equal. It could be washed in a moment, and be again ready for use, water not changing its texture as with vegetable matter. I know the brush has saved us from many stings and annoyances. The lower-story combs, when a third have been removed, have their bees shaken into the

super. An empty super is taken out on a barrow and filled. If two supers are on the hive the first super will then be empty, and it can be placed on top of the first upon the barrow. We often (one man) wheel a barrow with two twelve-frame supers from the apiary to the house. By means of a plank or other device the barrow is wheeled directly into the extracting-house, and this method is much easier and more rapid than carrying in buckets.

Brantford, Canada.

### STRAINING HONEY.

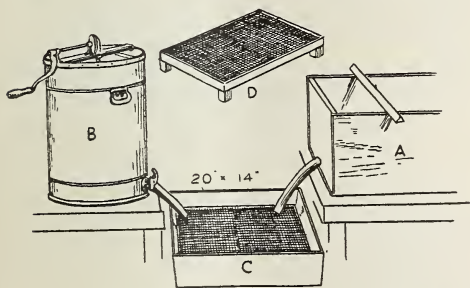
How to Arrange the Uncapping-tank, Strainer, and Extractor.

BY T. ARCHIBALD.

I have read with pleasure R. F. Holtermann's method of straining honey in your issue of Feb. 1. I have not the least doubt that it works well. The readers of GLEANINGS are legion. They live in every part of the country where lives the honey-bee. It looks quite reasonable then that a method of manipulating bees or honey in one locality might not be suited to another in which the climate is altogether different. The apiarist who reads the up-to-date bee journals has access to a fountain of knowledge he can not afford to be without in these days of competition.

The method of straining honey is not one of much interest to the bee-men of this climate. Honey deposited in the large tanks used here settles at once. In a few hours every foreign substance is on the surface, where it can be skimmed off. Straining through cloth is out of the question.

I will give a method of my own, which some of my neighbors are adopting. The following sketch will be its best explanation.



A is the uncapping-box. It is one of McIntyre's make. B is the extractor. C is a pan which receives the honey from both A and B. Inside of this pan is the strainer. The pan is 14 by 20 inches and 5 deep. The strainer is made by tacking wire cloth on to four strips of wood  $\frac{3}{4}$  by 1 and the length and breadth of the receptacle. This strainer is raised from the bottom  $2\frac{1}{2}$  inches. Four blocks of wood, 1x1 and  $2\frac{1}{2}$  long, stand in each corner as its support. From this pan

the honey flows through a two-inch pipe to the tank.

This method is simple, cheap, and easily kept clean. You can have a number of these strainers. They make good covers for hives at the time of moving bees. The size, 14 by 20, just suits an L. hive. I change the sieve every half-day.

Mr. Holtermann is opposed to exposing honey to the air. "The aroma is lost," he says. It may be; but here our best honey is that which lies in the tank exposed to the sun's rays for the longest time. Had I tanks enough I would leave it all out until the close of the extracting season, simply covering the tank with a white sheet. After a week or so of exposure a scum resembling the white of an egg covers the surface one-fourth inch thick. I want this out of the honey before I can it up.

Los Angeles, Cal.

[It is my opinion that the arrangement here shown has something of more than ordinary merit. It is simple and cheap. Conceding that the Holtermann inside of the extractor strainer is good, it requires an extra-deep can and a special strainer, one that is not easily get-at-able, and therefore not easily cleaned.—Ed.]

### IF I WERE TO START ANEW, WHAT STYLE OF FRAMES, SUPERS, AND APPLIANCES WOULD I ADOPT?

Prefer 8-frame Langstroth Hive and Nail-spaced Frames with a Special Bottom-board.

BY DR. C. C. MILLER.

To tell what contraptions I would use if I were to begin bee keeping all over again is very nearly equivalent to telling what I am using now; for in nearly all cases I have not hesitated to change, no matter what the cost, whenever I have learned of something better. Certainly I would not begin with bees in a sugar-barrel, as I did 45 years ago.

But to begin at the foundation, if I were to begin anew I would have at least the home apiary paved with Portland cement, with slight elevations at the proper places to serve as stands, so that the stands would be part of the pavement, always ready in place. This latter for two reasons: Because in the long run it would be cheaper than even the cheapest wooden stands; and also because bottom-boards would probably rot less on cement than on wood.

But the first cost of the cement paving would be considerable, and I should have a strong desire to have the feeling that any investment in that, as well as in buildings, etc., would be a safe investment, without any fear that, in the years to come, others might locate so close, and in such numbers, as to drive me out of that location. So I think if I were to begin again I would do my utmost to start a crusade for legislation that would in some way give me a legal right to a given territory, even if I had to pay heavily

ly for it. The day may never come when the bee-keeper shall have a legal right to territory; but if so, then the day will never come when bee-keeping will be on a stable footing like any other business.

After getting that Portland cement laid I'm not sure but every thing else would be about the same as I have to-day; so I'll tell you what I have, mentioning it wherever I'd like any thing different. It is well to premise that white clover is pretty much the only source of surplus in my locality, making it advisable to work for comb honey; although a fall flow from cucumbers and some other things generally helps to fill up the hives for winter.

My hives are eight-frame dovetailed, used two-story high whenever needed before the honey-harvest, but always reduced to one story when supers are given. (If I were not giving close attention to my bees I should want larger hives so as to avoid the danger of starvation in winter.)

My frames are Miller frames, and here is a good place to say that preference is always given to that which is like what others have—in other words, to that which is in fashion and to be found listed in the catalog of dealers so long as they catalog any thing *nearly* as good as the best; so I'm pretty well in fashion. I think the Miller frame is the most unfashionable thing I have. That's as much as to say that I think it a good deal better than any thing regularly listed, although it doesn't vary so much from the fashion after all. It's a plain wood frame, with top bar, end-bars, and bottom-bars all the same width,  $1\frac{1}{8}$  inches. Top-bar is  $\frac{7}{8}$  thick, with the ordinary double saw-kerf and wedge for fastening in foundation, with cut-off ends. Bottom bar is in two parts, each  $\frac{1}{2}$  inch wide, the lower edge of the foundation occupying the  $\frac{1}{8}$  space between the two parts, thus making the finished bottom-bar  $1\frac{1}{8}$  inches wide. The frame is filled with foundation which touches the end-bars at each end. It is deep enough so that, after it is wedged in the top-bar, it comes down between the two parts of the bottom-bar. Only one part of the bottom-bar is nailed on until the foundation is in place; and after the foundation is in place the second half of the bottom-bar is nailed on, and at the middle a nail is driven through both parts, squeezing the foundation tight between the two parts. The frame is spaced automatically endwise by the usual staple; but the side spacing is by means of common  $1\frac{1}{4}$ -inch nails driven in so as to project  $\frac{1}{4}$  inch. If I lived in Europe I'd use nails with heads of the proper thickness to be driven in automatically the right depth. But I don't live in Europe. If I were beginning all over, I'd send to Europe for the right kind of nails, or else have them made to order, although I suppose it would be an expensive thing to have only a few thousand made to order.

As already shown, the frame is entirely filled with foundation, and to prevent its sagging or buckling I again depart from the fashion by using five foundation-splints per-

pendicularly, each splint being  $\frac{1}{8}$  square, and boiled in wax.

Proof that I am not over-conservative lies in the fact that I have deserted the reversible bottom-board—my own invention—although the one I am now using is equally my own invention, if any thing so simple can be called an invention. It is nothing more than a plain box two inches deep, open, of course, at the entrance end. That allows a space of two inches under the bottom bars all the year round except during the honey-harvest. At that time the space is filled up so as to leave only  $\frac{1}{2}$  or  $\frac{3}{4}$  inch under bottom-bars. To fill up this space a sort of rack is made of any old stuff split up and then nailed together, raft-fashion, by cross-pieces. This keeps the bees from building down just as well as if it were solid, but gives extra chance for ventilation.

For surplus arrangement the T super (but I wouldn't like to have the T super without knowing how to use it), with plain wood separators, and one-piece two-beeway sections  $4\frac{1}{2} \times 1\frac{1}{2}$ , with possible experimenting to get a section of same weight but a little thinner and taller.

For hive-covers I'd get an outfit to start with of zinc-covered ones with dead-air space, groan at the thought of paying about 30 cents apiece for them, and then go to experimenting on cloth, paper, ruberoid, etc., to see if I couldn't find something just as good at less cost.

Perhaps that's as far as I need to go; for those are about all the things that would make any serious trouble for one if he should make the wrong start. Of course, I would have smoker, bee-brush, hive-tool, bee-veil, tent-escape, etc., but it wouldn't be a serious matter to change any one of these; but it would be a serious matter, as I know from experience, to change hives.

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## THE FERRIS SYSTEM OF PRODUCING COMB HONEY, AND SWARM CONTROL.

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The Ferris Comb-honey Attachment; its Advantage over other Forms of Supers.

BY A. K. FERRIS.

*Continued from page 382.*

A comb of brood is used on either side of the attachment, as shown in cuts 11 and 12. These combs of brood are the most powerful agents we have to induce comb-building and honey-storing.

A few days before we remove the old queens we slip a frame or two of foundation in the center of each brood-nest, in order to get nice clean white combs to be used in connection with the attachment. This will be drawn out, and, if done properly, will be well filled with eggs and larvæ. It is very important that they be as full as possible.

In some localities where pollen is very abundant at the time of the flow, drone-comb foundation may be used in sections to exclude it, for, no doubt, nearly all have no-

ticed that the pollen is stored exclusively in worker comb. At one time I confined a queen on drone comb, and found that, although they would rear worker brood in drone comb when compelled to do so, and would even carry pollen freely, yet it remained on the bottom of the hive, but was not stored in the drone comb. In localities like mine this drone comb is not absolutely needed, as but very little pollen is coming in during the flow.

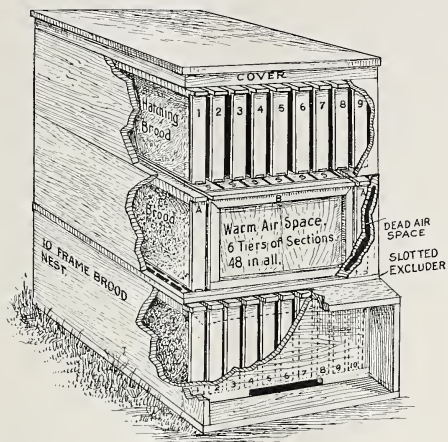


FIG. 12.

With a bottom entrance and a full story of brood below and an excluder between, the amount of pollen that would be placed above would be exceedingly small; in fact, I have put combs of pollen above which resulted in its being used up; but I know that localities differ, and one has to adopt methods to suit his locality.

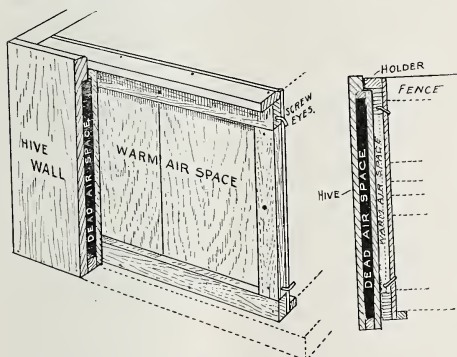


FIG. 12 1/2.

At this point we might notice profitably SOME ADVANTAGES GAINED BY THIS METHOD.

The first thing generally considered by bee-keepers is the cost, so we will begin with that. With the equipment for extracted honey, the only extra necessary is the comb honey attachment, which costs about

half the amount for a half-depth super and that of the cheapest make; yet in this we use the wire-cloth separator, which has been excluded on account of cost largely, and this still brings the cost of fitting up an apiary about \$1.00 per hive less than, if, fitted with the ordinary single-depth super.

Again, these attachments are so open that honey can be stored away in them until you wish to prepare for shipment, as it gives a free circulation of air on all sides; then when through with them for the season they can be taken apart easily and quickly, and stowed away in an exceedingly small space.

Last, and best of all, you are prepared for any kind of season; and if you wish to run for extracted honey wholly, or for comb, you can do so. In other words, you are master of the situation, and have the appliance that will produce more pounds of honey, and that strictly fancy, than any other device now in use. All of this is on the side of controlling swarming besides, but this will be considered later.

#### PREVENTION OF INCREASE.

This subject is so broad and so many factors enter into it that it will be necessary to discuss it from these varied conditions. In the first place, we all know that what will entirely prevent in one case will have but little effect in another. In some cases bees have filled their hive and portico, and then gone underneath and filled all the available space with honey. In other cases bees have filled their hive, and, when no more space was available, have simply done nothing practically, because they had no more room. In this case it will be readily seen that it would be almost impossible to make them swarm.

On the other hand I purchased two tested gray Carniolan queens of Mr. Frank Benton, and their bees prepared to swarm when no honey had been coming in, and they had only three frames of brood and plenty of empty combs, room, and honey. On account of their persistent disposition to swarm, later in the season I broke up these two colonies and made nuclei of their brood; but in nearly every case these nuclei constructed queen cells persistently, and finally one swarmed with less than a quart of bees.

The other colonies in the same yard of different races, and from a number of different breeders, made no attempt whatever at swarming. In another case our neighbor had a swarm of blacks that had reared brood extensively in the cellar, and had queen cells in process of development when set on their summer stands. In this case he cut them out and used them in some queenless hives. This man has kept the same stock of bees for twenty-one years, and during all that time has run for comb honey and encouraged swarming.

This shows that the disposition to swarm or not to swarm is much more prevalent in some cases than in others; so what would absolutely control in one case would have but little effect in the other. In order to

comprehend fully this subject let us take another illustration—one we are all familiar with :

In an early day the potato-plant bore seed freely; but men continued to cultivate them from tubers, until now the tendency to produce tubers at the expense of seed has been so intensified that it is almost impossible in some varieties to obtain seed; yet no one will argue that the potato of to-day is in any way inferior because it does not produce seed; for all know that it is just the opposite.

Look again at the wild maize, or Indian corn, with its flat cob and only an occasional kernel here and there, not in rows, very ungainly in looks, and then at some of the varieties that have been developed from it. This is a good example of what can be done by careful selection. Now in regard to bees:

Conditions and operations have tended to breed certain races in certain lines for almost centuries, as in the case of the gray Carniolan. They have encouraged swarming so long in Carniola that in some instances it has become very prominent. The black or German bee no doubt at one time was one of the best of races; but their mode of procuring honey by the brimstone-pit resulted in destroying the best colonies, and the continual breeding from the more inferior ones has greatly affected their offspring. But, we say, what has all this to do with control of increase? Very much indeed; for in order to control swarming suc-

cessfully all these things must be taken into consideration; and remember that the hive or method that will prevent in one case may have little or no effect in another.

Madison, Wis.

#### PROF. H. A. SURFACE AND HIS STUDENTS IN BEE CULTURE.

BY E. R. ROOT.

The illustration below shows a view taken of Prof. Surface and his class at the State College of Pennsylvania. The apiary where this picture was taken is located in a little grove a short distance from the college grounds. It is at this yard where the professor has been conducting various experiments along practical and scientific lines. It is here, too, where he took his students to make demonstrations and at the same time instruct them along the lines of practical management of bees.

On one of these occasions, apparently, a kodaker was present and secured the accompanying picture. Prof. Surface is in the foreground, pointing out the queen on the frame he is holding, to his other queen (at his right) who at the moment looked up, scarcely repressing a smile, while her husband with intense seriousness is evidently oblivious to the kodaker's presence.

We had expected to have Mrs. Surface sing for us at the field-day meeting at Jen-



PROF. SURFACE AND HIS STUDENTS IN APICULTURE.



SOLAR AND ARTIFICIAL HEAT WAX-EXTRACTOR.

kintown, but we had to forego that pleasure, as it was impossible for her to get away.

At the left of the picture will be seen a large open drygoods box. Prof. Surface had put a number of the colonies in winter cases of this construction, packing them in straw or leaves for the winter. When we examined the bees between sessions at the State College convention held during the last of March we found them in good condition save that one or two had succumbed from some unknown cause. These cheaply constructed winter cases doubtless serve an excellent purpose.

As the trees were not leaved out at the time this picture was taken, it will be seen that this "dissected" colony was a fair one, as the bees were fairly well bunched over the frames.

#### BEE-KEEPING IN IDAHO.

A Solar Wax-extractor so Designed as to Take a Small Stove to be Used Early in the Morning.

BY E. F. ATWATER.

Last spring we built the solar extractor shown in the cut. It turns on a tin or bolt in front, and on two furniture-casters in the rear. In front you see a door which gives access to the lower compartment. The galvanized pan will hold a lot of cappings or other material to be melted, and the wax, as melted, flows down into a pail, and from that into another, on the well-known Raufuss principle. A part of the floor under the galvanized pan is cut away; and if we wish to start

the apparatus to work early in the day we melt as much wax as possible, and as long as possible we insert a small coal oil stove in the lower compartment so the heat is applied directly to the lower side of the pan. The only objection to this arrangement is that such a stove requires some watching or your whole extractor will "go up in smoke" some day.

Note the glass. Instead of buying a big sheet of glass, which, if broken, makes a considerable loss for Somerford's "poor bug-man," we get narrow strips, 3 to 8 inches wide, and build them together with white lead. These narrow strips usually cost nothing. The sash and glass may be taken off; the compartment containing the pan may be taken off from the lowest compartment; the machine is effective, economical, dissectible, and repairable. See the piles of comb-honey supers. We prepared last spring over 800 of them, with sections and full sheets of foundation. We have them yet.

Meridian, Ida.

[The scheme of having artificial heat in connection with solar heat I saw in practical use in Colorado some seven or eight years ago. Mr. R. C. Aikin and one or two others in that State had employed the combination for some time. Whether the principle was original with them or not I do not know; but as I now remember it they claimed much greater efficiency—that is, they got much more wax from a given quantity of comb than when solar heat alone was used. This reminds me that solar heat with the sun extractor is a very inefficient wax-rendering device. The sun extractor should *always* be used in connection with a wax-

press, otherwise there will be a lot of valuable wax lost.—Ed.]

# CORNERING THE COMB-HONEY CROP IN 1905.

The Biggest Honey Deal on Record; a Little Inside History Just Made Public.

BY E. R. ROOT.

It will be remembered that, during the early part of 1905, the condition of the honey market, so far as prices were concerned, was any thing but satisfactory. Had the season of 1905 been an extraordinarily good one, or even an average one, there is no knowing where prices would have gone. Whether fortunately or otherwise, the season proved to be the shortest ever known in the experience of bee-keepers, and the actual returns showed that the crop was a very light one. In the Western States the amount of honey secured was unusually light. In the East no honey of any account found its way into the markets except from Michigan, where the season proved to be good. When it became evident that the crop would be short, prices began to tone up.

But there was another factor at work stiffening the prices that had already slumped to a low level—a factor that the general bee-keeping world knew nothing about, and we bumped up against it only incidentally a short time ago.

Thos. C. Stanley & Son, formerly of Dixon, Ill., now of Manzanola, Col., learning from GLEANINGS that the crop was a very short one, conceived the idea of buying up all the western car lots of comb honey in sight. This would seem impossible if not foolhardy. But the junior member of the firm, Thos. J. Stanley, relying on the reports in GLEANINGS, traveled extensively through the West; and where the honey had not already been sold he bought it up until he had *actually cornered some 35 carloads of honey*. He bought in Arizona, California, and Nevada, as well as in his own State, Colorado, until he had all the available supply of table honey. Wherever he could hear of another carload he bought that up; for it would not have done to let a stray carload get into the Eastern markets and knock the price away down, even below some of the prices he had already paid. It was, therefore, necessary to get into the position where he could "bull" the market. He was, therefore, forced to put out an investment of between \$90,000 and \$100,000, trusting to luck to come out whole, and, if possible, to make a little profit. This took "nerve" to go in that deep when it is remembered that comb honey rapidly depreciates in value, and that the selling season would soon be gone.

The junior Mr. Stanley figures that if 35 carloads had been allowed to break loose on the Eastern market, depressed as it was early in the season, prices would never have advanced. But he held it until they began to tone up, now and then letting loose a car-

load as the market would stand it, never letting it be known, of course, the big reserve he was holding. After a little the buyers were forced to come to him as he was the only man who had any supply. He kept selling until he had got down to about twenty carloads. This was as late as Thanksgiving day. Things began to look a little dubious to him, especially when he heard that Cuban honey was being shipped into New York. But this, fortunately for Mr. Stanley, proved to be a mistake. He held the prices up, selling a carload here and there, until at the close of the selling season he had disposed of practically the entire lot.

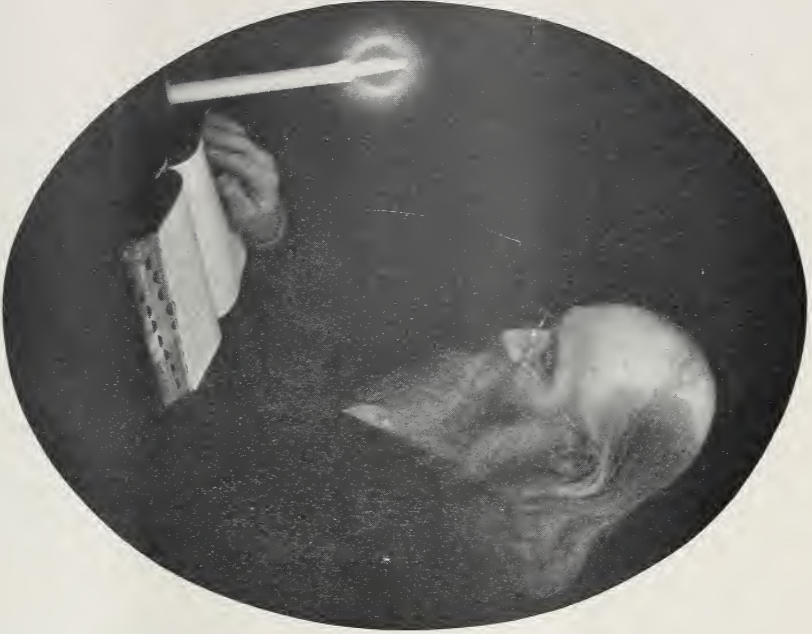
When asked as to whether he had made any money out of the deal he merely remarked that, while he advanced and held up prices, he was not sure that he had cleaned up any very big profit. When I ventured to inquire whether he would try it again or not he gave his head a doubtful shake, saying it took too much nerve and worry to handle such a lot of honey; that if the season should be at all favorable with an output of between 600 and 700 carloads of comb and extracted honey—well, he just would not try it.

Probably this feat of Mr. Stanley could not be duplicated except in a like season of scarcity of honey. It is doubtful whether any one else will ever have the nerve to buy up \$90,000 or \$100,000 worth of honey and trust to luck to get out whole. The very great danger of damage in shipment to comb honey would necessarily make capital very slow about laying in a big store of it.

Thos. C. Stanley & Son have been in the bee business for a number of years, having started in 1884, in the swampy lands of Skillet Fork River in the southern part of Illinois. They have had all the way from 500 to 2000 colonies, some winters losing large numbers in wintering. The senior member of the firm spent seven years in the Cumberland Mountains of Tennessee, some 75 miles north of Chattanooga; but it is the junior member, Thomas J. Stanley, who has been the active honey-buyer. We are glad to introduce both of these gentlemen—the senior member of the firm in his characteristic attitude, for he is devoutly religious, an ardent Methodist, and now in his 76th year finds great pleasure and solace in reading the Bible and other religious works.

The junior member has appeared at a number of the National conventions, and will be recognized as the active man of the firm of Thomas C. Stanley & Son. He is a gentleman of large physique and commanding presence, with a pleasant manner.

I may state that it was with some reluctance on the part of the younger Mr. Stanley that I obtained the facts for this writeup. He felt that *some* among the bee-fraternity might misconstrue the facts here given, to the disadvantage of his company; for be it known there are a few bee-keepers who believe that many of the honey-buyers are but little better than a hungry vulture, ready to squeeze the last cent out of them, buying at



THOS. C. STANLEY.



THOS. J. STANLEY.

So far as the editor knows, Thos. C. Stanley & Son are the only people who have ever attempted to corner the caland comb-honey market to the extent that they bought up nearly all of the large lots of honey in sight last year, and sold it before the close of the season. Such a feat would be possible only in a poor season.—Ep.

a low price and selling at a high one; but when they one and all remember the services performed by this firm last year, and when they consider that the Stanleys made "no great speck" out of the big deal with all its worry, I think we may safely exonerate them—nay, rather, extend them a vote of thanks, for the market has been stiffer ever since.

Are Thos. C. Stanley & Son on the market again for comb honey for 1906? Really, I do not know. The last talk I had with the junior member was to the effect that they would probably quit the honey-buying business and go into something more profitable, involving less risk.

### THE BABY-NUCLEUS IDEA NOT NEW.

Some Experiments with Different Forms and Sizes.

BY E. F. ATWATER.

From articles written for the bee-journals of the last few years one might be led to imagine that the "baby nucleus" is something new, but such is not a fact; for at various times in the past many bee-keepers have tested, adopted, and discarded some such arrangement for the economical mating of queens. My own first experience with them was in the late nineties, when I saw them in successful operation at the home apiaries of Mr. Thos. Chantry, then of South Dakota. His baby nuclei consisted of a case similar to the old Heddon super, containing four little colonies under one roof, with  $4\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{1}{2}$  beeway sections for frames. With these I had partial success in South Dakota and Idaho, so that when E. R. Root called in 1901 I had in operation several such quadruple nuclei of the Chantry type.

These proving, on more extended trial, unsatisfactory, my next move was to make frames  $8 \times 8\frac{1}{2}$ , so that two such frames would go into a standard frame. These were very satisfactory; and if I had been content to end my experiments as to size of nuclei and nucleus frames at that time I would certainly have mated far more queens with less labor and expense during the past three seasons. However, to ease a surplus of ingrowing ideas I made 50 boxes of the Banks-ton-Laws type, using them one season, mating a good many queens from them; but they proved to be failures except when every condition was very favorable. Then, of course, I had to test the little two-comb Pratt box for frames  $4 \times 5\frac{1}{2}$ ; also 50 boxes to hold one ordinary  $5\frac{1}{2} \times 17\frac{1}{2}$  shallow extracting-frames.

Let no one imagine that I did not study all available literature in regard to these "monkey fixins'," for I think that few have entered upon the subject with more interest, or given it much more study.

The cuts herewith show a part of my baby-nucleus mating-yard as it appeared, last

August. The Pratt boxes are seen in the middle row, while the others contain one shallow extracting-comb each. These long one-comb boxes were made so that one side could be removed; and by cleating two such boxes (minus one side each) together, and adding a single wide lid, a fine three-frame nucleus box is the result, and all were so remodeled during the past winter.

These boxes, by a suitable dividing wall across the middle, may be converted into double mating boxes for the frames  $5\frac{1}{2} \times 8$ . This latter size of frame I think will prove best of all—a happy medium: at least I have such confidence in them that I have enough on hand for 100 nuclei. I never use less than a large cupful of bees in a mating-box, and in cool weather a pint will be better, for the 100 to 200 bees in the little boxes seldom could or did induce a queen to mate or lay promptly unless weather and nectar-flow were favorable.

We use two styles of feeders in our mating-boxes. We soon found that Pratt's plan of waxing the lower inside of the hive was a failure *here*, as no such arrangement will long hold water or feed in this climate.

A plan that does work very well is to make the bottom-board of  $\frac{7}{8}$  material grooved as in the Alexander feeder, well waxed. Then squirt the feed right into the entrance.

Another good plan is to make a shallow pan, say  $\frac{1}{2}$  inch deep, of roofing-paper (not tarred) of a size to fit loosely on the floor of the nucleus, under the frames. In this pan put a float or a little excelsior, and squirt in the feed with a Pratt bulb feeder.

Another useful point—in confining nuclei or full colonies well ventilated, if you must leave for an out-apiary, and can not return in time to release the bees, just fill the entrance with "Good" candy; or, if this will not retain the bees as long as you wish, make a tin or wooden tube as long as necessary; fill with candy, and adjust to the entrance so that the bees must eat through to get out.

### A SUGGESTION BASED ON THE ALEXANDER PLAN OF MATING.

As the Alexander plan of mating queens has been very successful with us it has occurred to me that two to four nuclei can be built together, the compartments separated by double queen-excluders. In this case brood will probably be necessary in each compartment; and if one queen is wanted, all must be taken, and young virgins or cells introduced to all at one operation.

Now a point which I think valuable to users of the new  $5\frac{1}{2} \times 8$  nucleus frames. As these frames are unspaced we make use of the "Chantry stick-bar," little bars  $\frac{1}{8} \times \frac{5}{8} \times 9\frac{1}{2}$ , which, when placed between the top-bars of the little frames, not only space them but form, with the top-bars, a warm bee-tight inner cover to the little boxes. If one has to haul these mating-boxes I think it would pay to add little end-bars to the stick-bar, say two inches deep, making a



ATWATER'S BABY-NUCLEUS MATING-YARD.

bottomless shallow frame, which, when placed between the  $5\frac{3}{8} \times 8$  frames, would both space them and prevent all "swing" in hauling. Less and less do I care to run any size of mating-box without *brood*, and every thing in as nearly normal condition as possible.

Meridian, Idaho.

[These small or miniature mating-nuclei in point of use go back of Thomas Chantry. Both Mr. Henry Alley and D. A. Jones antedate him from eight to ten years. We used the Jones nuclei back in 1882, and at that time we didn't know its value. History repeats itself sometimes, in that we have to rediscover some good things.—Ed.]



ANOTHER VIEW OF THE SAME YARD.

## THE HONEY-MARKET.

A Railroad Engineer's Views on the Subject;  
Why Honey Should be Sold Direct to  
the Consumer.

BY A. C. ARMSTRONG.

I can not say that I can give any secret for stimulating the appetite for honey, page 299. I think it's born in us to like honey; anyhow, I have been fond of honey ever since I was born. Why! is not honey high enough now—that is, to the consumer? I saw in a store in Syracuse, N. Y., a month ago fancy honey marked 30 cts. (seems as if this is nearly high enough), while over on the public market the dealers pay the producer 10 cts. It appears that the middlemen get the lion's share of the deal. Hence we should dispense with middlemen as much as possible, and I am sure it can be done to a great extent. I should see that my neighbors know I had honey to sell at a reasonable figure; and, if within driving distance of any town, I would advertise somewhat, as the consumer always pays for the advertising. I would see that all in it knew that I had honey, even if I had to have a house-to-house canvass of the place. Go weekly. Don't think if you have asked a party to buy honey once, and met with refusal, that there is no need of trying again, for the next time he may want some, and have the money handy or some other thing.

Twenty years ago my father had a farm of 130 acres. He raised grain and potatoes; kept two cows. One day his shoe-dealer asked him to bring him a little fresh-made butter. Father took him four pounds, and the shoe-man gave him 30 cents per pound, just the same as he was paying at the store. The next week father took him more butter; and the shoe-man's wife's sister wanted some butter. On the way home father bought two Jersey cows. In less than three months he was supplying 15 families with butter, eggs, lard, maple syrup, sausage, vinegar, apples, and potatoes, all direct from the farm to the consumer. At present my brother does the business, and they sell all the butter from 40 cows, all the eggs from 22 farms, buys 200 pounds butter per week from a creamery, has sold 35 dressed chickens per week since July last, also made 30 hogs into sausage and lard, and the butter route has taken all of it fresh, and no middleman in the deal.

In 1904 I had some honey to spare. I made a case that would hold each section by itself, or would carry one section alone, and put 24 fancy sections on the wagon with the butter-man to sell at 15 cts. The first day he sold six sections—just a bait, you see; next week he sold 13 sections; third week a whole case, and more called for, and they took all I had to spare in 1905. I had no honey to sell. My brother says his customers wanted a ton or two.

From this we have learned that there are people who like good, fresh, clean stuff from the farm, and who are willing to pay

for it, and that a good fresh article will sell itself, while a poor article needs a life-insurance agent to sell it.

Now, I'd like to tell you about buying honey. In 1884 I called on my grandmother. She sent me to the store, near by, to get a little honey, while she made some biscuits for supper, as I was fond of honey. Well, I got the honey, and the sections had considerable empty space. All this was filled with dust, and the cappings were covered with fly-specks. As my aunt said, "You got the honey at retail and the fly-specks at wholesale." She uncapped it before it went to the table, but somehow my appetite for honey was not as good as usual just then. It did not taste just right.

Another time I was at the house of a friend when the grocer's boy came in with some goods in a box. He dropped it on the table with a thump, and away he went, whistling "Down went McGinty." My friend went to taking the goods out of the box, and a section of honey and a cake of stove polish had entered into partnership—that is, the stove-polish was inside the section, while some of the honey was outside. No harm was done to the stove-polish, but the honey appetite got destituted a bit.

Another time I bought a case of honey and had it shipped seven miles to me. It was in good condition at the time of purchase; but on arrival it was mush—case leaking. After that I generally carried my honey home.

Now a word about wasting honey, p. 351. Do people throw away what butter there is left in the butter-dish at the end of a meal? I fancy not; and a honey-dish with a cover that will hold a section thick or thin won't waste very much honey, any more than it will of butter.

Again, Mr. Crane's article, page 284. I bought honey in 1870, and had to go to a drugstore to get it. The grocers did not handle it, but druggists had a "strained" article.

My family are all healthy, but my wife says I am the "honey hog," and I am healthy. I have worked since Nov. 10, 1890, every day but two. I was sick one day in 1901, and Jan. 8 this year.

I think Mr. Secor overdoes the thing in putting honey and cream on his pancakes (honey is enough for me). I wonder he doesn't want some maple syrup on top of the cream—page 364.

Wait a while about the photograph. There may be some of the other bee-keepers who also eat some honey, although I have heard of people who kept bees who never tasted of the honey; but I keep bees for my own honey, and I sell only what I can't eat. I have some call from among my neighbors. One man says his wife is very fond of honey, and he buys her *two sections* each year! Yet she loves honey and he doesn't.

My brother found a woman who came from Germany twenty years ago who had never tasted honey in America.

Warner, N. Y.

### QUEEN-BEE RAISING.

Favors the Establishment of Record-books,  
and Keeping Data Relative to All Queens.  
The Importance of Good Queens.

BY HENRY HEIDORN.

[This article by Mr. Heidorn was read as a paper before a meeting of the Central California Bee-keepers' Association, and was afterward printed in the *Hanford Journal*. The Association voted, however, to send the paper as an article to GLEANINGS, and we hereby take pleasure in placing it before our readers.—ED.]

In response to the secretary's request to prepare an article that may be of interest to the members along the line of bee keeping, more especially on the value of good queens, allow me to say that I do not believe I can give you any thing that is new, or that you do not know; and while to elaborate in a theoretical manner on the value of good queens might be somewhat of a dry subject, I will resort to the results of my observation in the field of daily experiences. The subject is rather too large to do justice to in a short talk, and for that reason I will mention but a few conditions that appear to every bee-keeper, making a demand on his time, skill, patience, and endurance, in the accomplishment of his aims, which, I think, might help us to realize the value of a good queen. I have no doubt that all bee-keepers who are extensively engaged in bee-keeping, and more especially those who make bee-keeping a success through their efforts, instead of simply making money out of bees because of an unusually good pasture in a favorable season, will agree with me that queening and requeening has much to do in keeping the apiaries in healthy, strong, and profitable condition, for health and vitality and the making of good opportunities are necessary in the acquirement of success in any line. It, therefore, behooves every bee-keeper to look into and become familiar with the art of raising his own queens, instead of being always dependent upon what others should do for them, or to do without what he should have.

But before I say anything on this subject let us consider one other point which may prove to be of some consequence; namely, order and system. No banking institution, railroad corporation, or government is without an orderly system which enables it to transact and maintain tremendous institutions with success. Order is heaven's first law. How many of our bee-keepers keep order—such as enable them to reap a benefit from it? I think there are some. When I first started to raise bees, and inquired concerning queens, having been much disappointed I was referred to a man in Southern California who was said to be quite successful. I learned that he kept a record-book, and raised his own queens, but not for the market. Having obtained several queens from him I tried my own skill, and in 1899 I adopted the book system. I numbered all of the hives, began to raise from the two queens imported a goodly number, and in

discarding the old ones introduced, I recorded the young queens. Time offered opportunities to observe their usefulness, disposition, and their several distinctions; and as the season advanced, this book showed me the year during which the greatest number of queens were raised, which queen they were raised from, their color, size, and general appearance, and indicated their relation, if any. This information enables me to trace usefulness, disease, and worthlessness in all instances. It enables me to avoid inbreeding when selecting queens for breeding; gives me the age of all queens, by which I avoid that indolent and inactive disposition associated with feeble bees superseding when retarded by adverse conditions; it avoids many instances where a disorderly hive would go to pieces, or, if able to hold on, would raise an inferior queen or encourage the appearance of laying workers. Knowing a queen, when failing, to be three years old, I can act with safety accordingly. If but two years old I look for a cause. In this way, by observation, I have gained some remarkable experience. Unruly, rank, indolent, and unskilled bees can more easily be traced and checked when opportunities present themselves. I need worry but little about the yearlings during the swarming season, when work is so plentiful; but during that time I can watch the two-year-olds, and in case there are extra-good queens, such as I should not like to lose, I can swarm them off, which will render a valuable queen, which, perchance, you might have lost while being busy elsewhere. I am able, if occasion requires, to find a superseding queen among the three-year-old bees that are ready and fit to do good work in building queen-cells.

This brings to us the consideration of raising queens. Many are the ways and methods adopted by the different queen-breeders, as treated in the magazines and instruction-books, known everywhere. I think there is but little to be said at this time on any special method. A swarm in good condition, preparing to swarm, will do good work. If the queen does not suit, take unhatched eggs from your good queen, and place a limited number of cells in a broodless hive; and, when started, transfer the cells to the swarm before mentioned, and, if more suitable, transfer these larvæ into newly started queen-cells of the same hive, destroying the rest not wanted. This work should be done before any cells are found capped in the hive. If you are obliged to resort to forcing cell-building by removing or caging a queen, give but one set of cells, and, when completed, restore order. It is not profitable to give them a second hatch, after removing the cells when completed, neither should a new swarm, having lost its queen in swarming, nor a remaining swarm in a mother hive, having a young queen, be given brood to raise its own queen, nor any swarm having lost its queen. These we will class as disorderly hives; all are incapable of doing good work. A laying queen should be given

to them, and the swarm restored to order as soon as possible. Among these three classes are to be found the various stages of demoralization, all more or less connected with danger, threatening the queens to be introduced into such hives. For this purpose I use the queens which for any reason are next in order to be discarded. This is a satisfactory method of saving any uncertain swarm. Even if found quite reduced it takes much work off your hands and puts these rambles to work again, giving them time and assistance, if need be, to recuperate, after which they receive, in turn with the rest, a young queen. All young queens should be given to orderly swarms only so as to insure their safety and to give them a fair opportunity to exhibit their ability in as short a time as possible. And for another reason—in giving a No. 1 queen to demoralized bees they will find themselves incapable of providing for the brood, which is neglected, and in time decays, while the queen is retarded and disgusted; nor could this be overcome until enough young bees are matured to resume the work, and the result would be altogether unsatisfactory. A few of the yearlings may prove to be poor, some of the two-year-olds show signs of failing, and all of the three-year-olds are to be replaced by young queens as the season advances, using the superseding swarms for cell building, giving them the smallest number possible, say from one to three, under construction at one time, when they can be transferred, cell by cell, to the hives to be superseded.

I will not go into the details of the process, but call your attention to the fact that you are gaining considerable time in this way. By taking the matter in your own hands the young queen will be ready to lay before all of the eggs in the hive have hatched.

Now a few words in regard to the value of a good queen. Those that gather the most honey are not the most valuable, in my estimation, but a queen having the greatest number of desirable qualities. Some years ago I raised a queen which I called a Taylor queen. She was a great honey-gatherer, but her bees were cross. I found among her third generation a queen superseding, when but a little over one year old, which attracted my attention, and an examination of the Taylor queen, in the different apiaries, found them all in the same mood. I raised from another queen of good habits, color, and form, requiring two supers for two seasons, and found that all the young queens were absolutely useless. This I state to demonstrate what it would have meant to me if they had been allowed to remain. Both of the mother queens were very good in one way, and very poor in other ways. A third queen, of bright color, excellent form, and good disposition, was hardly ever found laying in the super. The combs were built smoothly, and were filled in less time than any other in her locality. She was certainly more valuable than the two before-mention-

ed queens, taken together. I had been disappointed in both, lost an opportunity while raising and trying the young queens, and, on finding them worthless, the old queens had also ceased to be, while the young queens from the last one mentioned were mostly raised cell by cell, while superseding.

I feel certain in saying that I gathered over two tons of honey last summer more by having these young queens, and have no doubt that there will be a fair stock to improve upon during the coming season.

I trust that, in selecting and relating these personal experiences, the value of a good queen will be more fully realized; yet, without a proper system of management, these points can not be successfully brought out, nor should we forget that making greater demands on the queen, under certain conditions, their vitality is exhausted in a shorter length of time than if left to themselves, and their health is more often impaired. We should, therefore, learn to raise good queens, ever to raise the standard of health, and never allow any condition to prevail that will bring on a decline, as would have been the result had I allowed those undesirable queens to spread through the apiaries.



#### WHY A BUCKWHEAT HONEY-FLOW CHECKS FOUL BROOD.

In footnote to article in June 1st GLEANINGS you wish to know why I claim buckwheat honey is death to foul-brood germs, etc. I will say frankly I do not know. Absolute knowledge is not to be had in this world. I *believe* buckwheat honey to be strongly acid from the amount of poison in bee-stings and the odor of the apiary at that season; and I *believe* in its efficacy as a disinfectant, because, while foul brood will gain steadily during a flow of clover, raspberry, etc., yet just as soon as buckwheat starts in, foul brood disappears. For instance, last summer I left one colony untreated to show my brother from Florida, on his arrival, what real foul brood is; but a flow from buckwheat set in two weeks before his arrival. On his arrival not a cell could be discovered in the colony, and the colony is free to date.

My deductions are drawn from an observation of more than a dozen years, yet they may be in error, although Alexander's experience seems to confirm my views. A colony or two show slight traces of disease at present, and, as usual, I find it steadily gaining during apple, raspberry, and clover flow. I wish you could see it as I have it now.

Truth is what we all want, and I should be pleased to find myself in error.

Frenchtown, N. J. W. W. CASE.

[I can scarcely believe that buckwheat honey is more antiseptic than any other kind; but it is a well known fact that a heavy honey-flow from any source will check and often cure black or foul brood. As buckwheat appears to be your main source it naturally receives the credit for its apparent curative qualities. Your other honey-flows are not *heavy* enough to act as a check on the disease.—ED.]

#### PAROID ROOFING FOR HIVE-COVERS.

Have you had any report on the use of paroid roofing as a hive covering underneath the wooden lid? I have used this now for two seasons, and find it very satisfactory. The taking-off of the cover of a hive is sometimes troublesome on account of being glued down so tightly by the bees; and when it comes off it comes with a jump and a jar which is not very quieting to the bees. With a sheet of paroid roofing under the cover, just large enough to cover the hive without extending over the ends or sides, the lid comes off easily, and one can take hold of the paroid at one corner of the hive and lift it up gently, exposing a portion of the hive or taking it off altogether, as one wishes. The bees do not eat into this material the way they do into table oil-cloth or any other covering that I have ever tried. Another point in its favor is that, no matter how much the lid warps, this piece of roofing will lie flat on top of the hive and close it tightly. I have used the two-ply roofing only.

WM. HAHMAN.

Altoona, Pa.

[We have never tested this paroid roofing to go next to the brood-nest, but I have seen it in use on top of hive-covers in lieu of tin or other cover material. So far as we know it is giving good satisfaction. We shall be glad to receive reports from others who have tested it.—ED.]

#### A SIMPLE AND EFFECTIVE WAY TO CLEAN UNFINISHED SECTIONS.

A great deal is said of late about how to clean sections. To me it is a very simple matter. First, extract from all that are worth it; then at the close of the day, when bees are done flying, place from one to five of them at the entrance of every hive, where the bees still come to the entrance. They will be cleaned before morning. Leave them there till toward night, then remove them and replace by another lot.

Harvard, Ill. J. L. ANDERSON.

[Your plan will work satisfactorily; but a much simpler way is to store the sections in a hive, put the hive a distance from the yard, and let the bees rob them out. This may seem like foolish advice to put in a bee-journal; but knowing so many practical bee-keepers who use this method I am the

more bold to recommend it. But the beginner, at least, should remember to put the supers containing these wet sections quite a distance from the yard, otherwise he will cause more or less of an uproar in the apiary; but as soon as the honey is all gone and cleaned off from the combs in the sections, every thing will quiet down.—ED.]

#### A SUGGESTION TO SAVE BREAKING SECTIONS WHILE FOLDING FOR THE SECTION-PRESS.

It has always been impossible for me to fold sections and press without breaking seemingly a large portion of them. I am aware that the kind of lumber and proper use of machinery have much to do with it. I also discovered that a great many were broken because, in folding by hand, we were very apt to bend the middle corner a little too far, or because it was the middle corner it received more strain from a longer and consequently harder strain. To avoid this extra strain on any one corner more than another I fastened a square block,  $1\frac{1}{2}$  thick by  $3\frac{1}{8}$  by  $3\frac{1}{8}$ , on my Hubbard press just below the casting which supports the section while the corner is being locked.

It will be seen that, when the section is folded around this block, each corner receives its right angle-bend and no more. The section can then be placed above in the casting, and the corner locked in the usual way. With me the above saves hundreds of nice sections from being broken every year; besides, I can save a little time in crimping. The above dimensions are for  $4\frac{1}{2} \times 4\frac{1}{2}$  sections.

F. H. CYRENIUS.

Oswego, N. Y., May 28.

#### SECTION STAMPS OR LABELS.

I do not like C. G. Dickson's inscription, p. 1250, for the simple reason that it leaves the impression that there *is* comb honey that is *not* pure. Here is my idea:

Comb honey can not be made by any thing but bees.  
From apiary of —

Let us put this fact plainly in sight of every purchaser, and the horizontal bar of the shipping-case is the place to put it; also, if the manufacturers can not stamp our sections at reasonable cost, each producer can have his own stamp. I should like my stamp to print on each section, besides the inscription above, "This assertion is backed by the National Bee-keepers' Association with \$1000. This honey came from the apiaries of F. D. Andrews, near Walsenburg, Colo."

Now, to go further, if we had laws to compel each producer to stamp his name on each section, or if dealers would refuse to buy any that is not stamped, we could then accomplish something, as people desire to know where their food comes from; but when there is no way of knowing, it is very easy for them to remember some of the newspaper stories as to where it came from.

Walsenburg, Colo. F. D. ANDREWS.



## CHAPTER VIII.

## PROGRESS IN THE SUPERS.

Nearly a month has passed since my last visit to the out-apiary, and it is now August 18. The buckwheat is now in full bloom, and the snow-white fields, nestled down here and there among the meadows, cornfields, and pasture lands, remind one of days in early spring when the snowbanks are loath to leave under the enlivening influences of the oncoming summer sun. With the blooming of buckwheat, cool days and colder nights come on, which are not what is needed for a good yield of honey from that source. Hot days, with heavy dews, and an occasional foggy morning, are the ideal for a prolific yield of nectar from buckwheat. But the bee-keeper always looks on the hopeful side, seeing the silver lining to the cloud, even though this lining may be on the side from him, and hidden from his outstretched arms. In just such a hopeful mood I am again at the out-apiary, this time to see that all colonies have sufficient room, should there be a heavy flow from buckwheat through returning good weather.

Notwithstanding the poor weather, I find that most of the colonies are well along in the super next to the brood-chamber, while the most of them are beginning work on the foundation in the one above. Four or five are quite well advanced in these, and with such the supers are exchanged, the one being nearly completed set over that having less work done in it, with a super of empty sections on top of the two. In this case this top super was of no value, as the season was so poor that the bees did no work in it. However, in this race for honey we can not tell how things are going to turn out, and I hold to the idea that it is always better to do a little work for naught than to have a loss of 10 to 25 pounds of honey from each colony through any inattention of mine. Forty minutes to an hour sufficed for all that was necessary to be done at this time, and the whole gave me an excuse for an enjoyable outing with the auto. This was visit No. 8. If greatly pressed for time, this visit could be dispensed with without experiencing any great loss in honey in the average year.

## CHAPTER IX.

## A SIMPLE WAY TO PUT ON ESCAPES WITHOUT LIFTING.

It is now September 8th, and the honey season for 1905 is ended, as no surplus is ever secured in this locality from fall flowers. And it has been one of the most

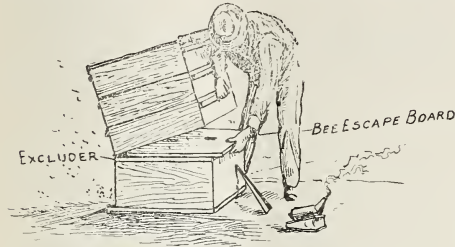
singular seasons I have ever known as to poor weather at the time of the blossoming of our honey-producing flora. It was mostly wet, cool, or very windy, during the time of clover, basswood, and buckwheat bloom, our three resources for surplus honey, and quite generally fine and warm outside the time they were in bloom. We often have poor bee weather during the time one of these sources for honey is in bloom, and once or twice I have known it thus during two of the sources of supply; but to have it poor during all three puts the season of 1905 at the top, along the line of bad weather, during the expected harvests from all sources, and giving it the name of the "poorest season ever known" among my bee-keeping neighbors. Enough thin nectar was gathered to keep their bees rearing an abundance of brood, resulting in much swarming, and hives light in stores for winter; but the surplus crop with them was very meager.



USE OF THE WEDGE BETWEEN SUPER AND EXCLUDER BOARD.

I now go to the out-apiary for the ninth visit, and the chief work at this time is to put an escape-board between the brood-chamber and the supers of the whole 28 colonies. To do this best, one of the escape-boards is placed by the side of each hive, before I commence, when I take the piece of wagon-spring used to pull the staples out at the first visit (a long stout chisel will answer in place of the spring), the smoker and a wooden wedge,  $1\frac{1}{2}$  inches wide by one foot long, the same being two inches thick at the big end, and go to hive No. 1, row 1, stepping to the back side of the same. The point of the wagon-spring is now pushed between the supers and the hive, or between the supers and the queen-excluder, where one of these has been left on, as with the tiered-up hives. I now bear down on the "handle" end of the spring, enough so a crack is made of sufficient size to insert the point of the wedge, pushing the wedge until a one-eighth-inch opening all across the back is made, when puffs of smoke are driven through this crack to drive the bees away. I am careful not to make this crack big enough at first to let out any bees; for if I do, they are sure to crawl all about on the back side of the hive and supers, to become a nuisance through my killing them, and their stinging my hands during the rapid handling now required. By smoke driven through this one-eighth-inch crack, the bees are "stampeded" in all directions away from the place where I am at

work, and thus are entirely out of the way. By the use of the piece of wagon-spring as a "pry," the wedge is soon pushed in one-half its length, this giving a one-inch opening into which I can blow smoke, which is now done quite freely. The smoker is now quickly set down, when one hand grasps the escape-board, and by thrusting the fingers of the other into the opened crack, the supers are lifted up at the back end as high as possible without having them slide off the front of the hive, and the escape-board pushed in as far as it will go toward the front of the hive, when the supers are



HOW TO PUT ON THE ESCAPE-BOARD.

quickly lowered on to it. The smoker is now quickly grasped again, and a stream of smoke sent in at the opening which this has made at the front of the hive by the escape-board not being quite in place. The chisel end of the spring is now caught under the back end of the bottom super, while the other hand grasps the top (forward end) of the cover, when, by bearing down on the spring, so as to make a fulcrum of the escape-board, and at the same time pulling with the top hand, the supers are easily and quickly slid in their place, so as to cover nicely the escape-board. Quickly go to the front, catch the chisel end of the spring under the escape-board, with the other hand at the back, on top of the cover; bear down on the spring so as to make a fulcrum of the hive below, at the same time pulling with the top hand, when the board with its load of supers is quickly and easily brought completely over the top of the hive. If a sort of rocking motion is given to the piece of wagon-spring when bearing down, it will facilitate matters much, especially where there is a heavy load of supers or hives to go on the escape-board. The heavy end of the wedge takes that to the ground and out of the way, immediately upon the lifting of the super, so neither of the hands is obliged to touch it, thus saving one motion when we are in a hurry to get what is needed done before the bees realize what our interference means. The wedge should be made of some kind of hard wood, and be polished smooth. Otherwise it will "broom" up from the heavy pressure that is brought to bear on it in handling supers or heavy hives, three or four stories high, which are filled with honey. In this way I have put the supers in a whole apiary on the escape-boards without killing scarcely a bee or arousing the anger of a

single colony. It has taken some time to tell this in writing; but when the "trick" is once learned, it takes but a moment to do it, and that with an ease which seems like magic, even with three or four filled supers on the hives. This is one of the *easy* "short cuts" I use when taking off supers at the end of the season. An editor of one of the bee papers, after seeing me put on escape-boards in this way, wrote a friend about it in these words: "It was a caution with what speed and dexterity he could manipulate the hives and supers. With his practice and skill he killed very few bees, and he did not irritate them either."

I have dwelt on this because it saves so much of the labor and backache required with the usual ways of clearing the supers of bees when taking off honey, at the end of the season. After the whole are treated in this way I am off for home, as this is all there is to be done at this visit, this being the ninth in number since we commenced operations in the spring.



What is man, that thou art mindful of him? and the son of man, that thou visitest him? Thou madest him to have dominion over the works of thy hands; thou hast put all things under his feet; the fowl of the air and the fish of the sea, and whatsoever that passeth through the paths of the seas. O Lord, our Lord, how excellent is thy name in all the earth!—PSALM 8:4, 6, 8, 9.

Away back when GLEANINGS started I used to know all our subscribers by name. Their letters were read with such intense friendly interest that I could remember name, locality, and most that they had written in previous letters; and I followed many of them in after-years as they branched out into different occupations aside from bee keeping. Among the first was G. W. Park, present editor of a little magazine on flowers called *Park's Floral Magazine*. Friend Park started in the "posy business" just about the time I started GLEANINGS.\* Some years ago, I do not remember just how many, he

\* George W. Park was educated at the Michigan Agricultural College. He was a student under Prof. A. J. Cook. The latter said some very kind things about myself in our journal a little time back. They were more kind than I deserved. And this reminds me that I have got something to say about Prof. Cook. His students, those who were educated under him, are scattered all over the world. The results of his faithful, careful, God-fearing work will live in the hearts of those students long after he is dead and gone. Can any human being do a greater work for humanity than to teach young men to love to follow in wisdom's ways? and our good friend Cook has all his life had a peculiar faculty for teaching his pupils to fall in love with their work—especially rural pursuits. Who can tell the amount of good that has been done the world by the agricultural colleges of our different States, especially with such men to lead as dear friend Cook?

began offering little packets of flower seeds for three cents a piper, or four packets for a dime. I thought at the time he was getting the price exceedingly low, and watched his publications year after year to see how he held out. His particular bent seemed along the line of supplying poor people—yes, *very* poor people—with the means of having some flowers and plants, not only in windows, but around in little bits of dooryards, brightening their humble homes; and I tell you, friends, such an undertaking is no small matter in this land of ours. The care of flowers and the sight of flowers may do more for directing the steps of many people in the way of “stepping heavenward” than anybody knows. Two or three years ago I began testing some of these very cheap flower seeds. I have told the result through GLEANINGS. I have also mentioned that friend Park has for some time offered valuable plants for so small a sum one could hardly understand how he could make it pay expenses. Let me illustrate:

Some years ago there was a new tree advertised, and it was called a honey-plant—the *Paulownia Imperialis*. Even though the trees were \$1.50 apiece I invested in one. It grew with wonderful rapidity, and was the admiration of the neighborhood for a number of years, when it finally died. Since then I have thought of trying the *Paulownia* again. About a year ago I was delighted to find it in friend Park's list of plants sent by mail postpaid for only four or five cents each, where you bought half a dozen or more, of the *Paulownia*. I uttered an exclamation of surprise, and picked out some more plants to go with it (to make a  $\frac{1}{2}$  doz.), and got the order off at once. The plant that came was rather small and insignificant-looking, it is true; but I put it in a little pot, and in a very few days it showed the peculiar characteristic of that plant or tree, rather. I think it was in August when I put it in the ground outdoors; but when the frost came it was three or four feet high. Thinking I started it too late to winter over I paid no more attention to it. This spring, when the weather began to get warm, it shot up from the roots and commenced again to put out its great leaves, and, like Jack's beanstalk, it is now four feet high, and one of its leaves is 23 in. across. Friend Park, in his description of the plant, says the leaves are sometimes 14 inches wide; so you see he did not tell all of it, even in a florist's catalog; and I believe this is characteristic of the man. You do not find in his catalog any “billion-dollar oats” nor “mortgage-lifter potatoes.” He may have just as good seed, but he does not talk about them in that way. At the same time I got the *Paulownia*, I planted a couple of campanulas, or Canterbury bells. Instead of sending me plants for only four cents each, I received a little clump that I separated so as to make half a dozen. For lack of room I put them down by the auto-house; and when they came in bloom Mrs. Root told me I had put the prettiest flowers on all the grounds away out of sight where

nobody could see them. The flowers are bell-shaped, of ever so many shades of color. Once more, in passing a country home a few days ago I was startled by a plant in a dooryard, three or four feet high, with delightful dark-green foliage, and such a mass of scarlet bloom that I stopped and went in to investigate. The place belonged to a bee-keeper, and so I was soon quite at home. The plant they called the perennial pea, and it winters out of doors without any trouble at all. As soon as I got home I looked over several catalogs and found perennial peas for 30 or 40 cents a plant. Then I thought I would look in Park's list of cheap plants, and there it was, sure enough, different colors, in his four and five cent list. This decided me that I would not wait any longer, but I would go and see how this friend of olden times sells things so cheap. He is located about 60 miles west of Philadelphia. His whole establishment is run by water power. Right in front of the factory is one of the handsomest round beds of pansies I ever saw in my life. Other beautiful plants were scattered everywhere.

The first piece of machinery that took my eye as we stepped into the factory was a new printing-press that takes a big roll of paper in at one end and turns out magazines all stitched, trimmed, and ready for use at the other. A boy takes out the magazines and packs them in boxes. The machine itself does all the rest. Only two people are required to operate it. A man sits near the machine, holding a lever to stop it quickly if any thing should go wrong. But I judge, from what I saw while I was there, he does not have very much to do. Now, I can not take time to tell you of *all* the wonderful machines in that great humming beehive; but I will just mention one more. It is also an automatic machine that goes by water power. It puts up packets of garden and flower seeds. I never knew before how it is that Bro. Park offers ten packets of garden seeds for a dime, postpaid. In answer to my questions he said something like this:

“Why, Bro. Root, there are lots of poor people in this country who find it a hard matter to pay even a nickel each for a packet of seeds. Besides, they do not want a whole packet. They have only a little bit of ground, only room enough for a few things of a kind. Seeds enough for a dozen cabbage-plants is all they need. If there were any left they would probably be lost before another season comes around. Well, you can give this machine 2 lbs. of cabbage seed for instance, and tell it to put 20 seeds in a packet, and keep on doing it till you come around again, and ask it to do something else. The machine says ‘All right,’ and goes to work. It will put up seeds all day, and, as it goes by water power, all night for that matter, without anybody to watch it. It counts correctly, does not forget what it is about, does not loaf, nor acquire bad habits. Now, as long as it would just as soon work as stand still, why not let it go ahead and thus help the poor people?”

During that summer day Bro. Park and I talked about a great lot of things—how we did our advertising; how we treated our customers so as not only to keep them but make each customer get more out of his neighborhood, etc. Finally I spoke something like this:

"By the way, Bro. Park, there is another queer thing about your management. You not only sell seeds and plants for *less* than a nickel, but, if I remember correctly, you guarantee that all money shall reach you, and that all plants shall reach your customers. Am I right about it, and do you still keep it up?"

He smiled, and said he did—that is, where they send money according to his printed instructions. Then he added something like this:

"Mr. Root, I believe you too started out with the idea of bearing not only your share of losses and mistakes, but a little more. I believe your customers soon became satisfied that you are trying hard to do right. You paid a good many bills that outsiders might say did not belong to you, and perhaps some would have prophesied that you could not keep on doing business in that way. Well, you have stood it pretty well, haven't you? You have enough of the things of this world so you get along very comfortably. Yes. Well, I too have paid bills where it was hardly fair and right that I should do so. But I have got along pretty well, after all. I have all I need, notwithstanding these losses and these burdens. Does it really pay to be small in business, and to make a fuss over a few cents one way or the other?"

There is a great moral in this matter, friends. I hardly need tell you that Mr. Park is a Christian. He loves the Lord Jesus Christ, and tries to make him his pattern in business as well as every other way. His hands looked satisfied and happy. He has built quite a lot of pretty homes for them. They have nice dooryards, pretty little gardens, and an abundance of *flowers*, as you may readily imagine.

I almost forgot to tell you how many subscribers during the space of forty years Mr. Park has picked up for his journal. There are over 400,000—pretty close to half a million; and a good many of them have had the journal so long that it is a part of their home. They send in their subscriptions for three, four, and five years in advance. I presume a lot of you have it already. The water power is secured by putting a dam across a stream that comes down between the beautiful hills of Lancaster Co., and this makes a little pond or lake toward a mile long that twists about among the hills with overhanging trees, and some of the trees were basswoods, and were full of blossoms.

Let me digress a little. The day before my visit a man belonging to a section gang was killed on the railway. He was too stupid to get out of the way of a lightning train that came along; and that is not all. After he was killed, not one of his comrades knew

his name nor any thing about him. Another one of that gang had been killed in a similar way only a few days before that. The foreman is instructed to watch for trains, and to give a peculiar whistle in ample time for all of his workers to get out of the way of a moving train. This poor man who had not intelligence or energy of life enough to keep out of the way of the train was a *part* of humanity. I do not think he committed suicide; but it would seem as if he did not care very much if he did get killed. Whose fault was it, or who is responsible for such things? How does it come that humanity, created in God's own image, should be so *widely* different? This man evidently considered life no boon. He not only gave no thanks to God for giving him a life to live, but perhaps he recognized no God. He may have been partly intoxicated. We do not know. Contrast his comparatively useless life with that of such a man as friend Park, or, if you choose, one like Edison, who has been such a benefactor to the *whole wide world*. What a difference there is in humanity, and even human beings who stand side by side! Is it birth and education and other advantages such as environment, etc.? Not so. Good environment is often a misfortune. See what the sons of millionaires are doing who have lots of money and nothing to do. Edison came from very humble parentage, if I remember correctly; and I used to read about him in the papers when he was only a newsboy. Abraham Lincoln had what we might call no advantages, and so it is the world over. If any boy has a *poor* chance, it seems as if it were, as I have said, the son of a millionaire. All the other boys, especially those who have to work for a living, can read the words of our text and thank God for the possibilities and the opportunities that lie before them, especially the boys who are just beginning to look out and see what God is placing within the reach of those who are born at the beginning of this twentieth century.

While at that meeting at Jenkintown one of these old friends whose name has been for many years familiar said he had something to say to me that he thought I would appreciate; and after he had said it I told him to write it down and put his name at the end of it. I think it will make a very good closing word for this Home Paper.

The greatest achievements of mankind pale into insignificance, and excite but little enthusiasm or admiration in the minds of those sufficiently intelligent to comprehend in the slightest degree the magnificence and grandeur of the stupendous works of Almighty God.

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#### AN APOLOGY TO OUR FRIENDS WHO CAME FROM HUNGARY.

On page 833 of our June 15th issue, after making an extract from a Cleveland daily about the boy who was drowned, where the reporter said more than a hundred people were looking on, I said: "The last sentence informs us that the father and son were Hungarians. Was that crowd all Hungari-

ans, or what were they?" Since then I have received a copy of the Hungarian *Daily News*, of Cleveland. This paper is printed in a language I can not read, with the exception of one article, and this article gives me about as bad a "scorching" as any thing I have ever seen in print, just because the editor takes it that I slandered or slurred the Hungarian people. I did not intend any thing of the kind. If the reporter for the daily paper was mistaken when he said the father and son were Hungarians *he* should apologize. The responsibility for that inhuman piece of work rests on the crowd that were gathered there that Sunday morning. I simply said, "Was that whole crowd Hungarians, or what were they?" We do not know, only that they seemed to have but little regard for the sabbath. Let me quote from the article in the Hungarian daily:

Were he not too ignorant in his own line he would know that Hungary is pre-eminent in bee culture, surpassing all nations in the quality of its honey and bees; and in this industry Hungary is recognized as leading the world.

If the above is true, and I sincerely hope it is, I shall have to confess that we have not been giving the friends from Hungary the credit they deserve. Two young men who assist us in our apiaries came here from Hungary to learn bee culture, and they are very nice Christian boys. God forbid that I should think of casting any slur on such as they. I find by our subscription-list, which goes largely into foreign countries all over the world, that we have just four subscribers in Hungary.

Let me repeat: The responsibility of the shameless scene I described rests on that crowd; and it is a disgrace to the nation they represent, whatever it may be. I think good people the world over will agree with me in this; and if what I wrote will be the means of stirring up more manhood in any nation or every nation, then I have not written in vain, and I will try to be patient under the severe and, as I think, unfair and uncalled-for criticism.



#### ORCHARDS—THEIR MANAGEMENT, ETC.

It grieves my heart to see there are not more of the farmers and gardeners in Ohio who visit the Ohio experiment station at Wooster oftener, that they may get the benefit of the experiments that are constantly being made there, especially for the benefit of the farming and gardening people. Let me give you a couple of illustrations—first, on the management of apple and other

fruit-trees. On one part of the great farm there is a very pretty orchard of different varieties of fruit-trees, one whole row of each variety running north and south. Well, in order to test different methods of cultivation or management, there are strips running east and west to cut across all the different varieties managed in this way. First, there is a strip embracing three or four trees, of clean cultivation. Nothing is allowed to grow at all, except apple-trees. Next to this is a strip managed in the same way except that cover crops, crimson clover, soy beans, cow peas, or something of that kind, is put on to cover the ground in winter and be plowed under in the spring to furnish fertility. Then there is a third strip, in grass or clover. The grass or clover is cut off at different periods and taken away; but right around every tree as far as the limbs extend the sod is removed entirely, and clean cultivation practiced. No weeds, grass, nor any thing else is allowed to grow at all. Last, but not least, is a strip in grass and clover, and all the growth is cut off at different times like the other; but the grass, clover, etc., are all put around the trees for mulching, say as far as the limbs extend.

Here are four different methods of managing an orchard, right side by side, and each strip embraces trees of different varieties, habits of growth, etc. Which method comes out ahead? If somebody had asked me before I had seen it I should have said where the leguminous cover crops were put in and plowed under; but, dear me! what an object-lesson the sight of that orchard was! This process had been carried on for three or four years, and the mulched trees were *away* ahead in every respect. The strip next to them, where the ground was left bare in a circle as far around as the limbs went, was the poorest in the lot. Then there was the cover crop next to the mulching. The mulched trees all had dark-green healthy foliage. Many of the trunks were twice the size of those adjoining where the ground was bare and clean the year round. I presume the mulching was largely clover hay; for on kicking down into it the soil was loose, dark-colored, and looked almost like woods dirt from the forest. The decaying grass and clover not only furnished nutriment for the trees, but it shaded the ground and prevented the sun from scorching the roots that ordinarily come near the surface for air. Come to think of it, is not that Nature's plan as we see it in the forest? The roots are covered with dead and decaying leaves. The ground is shaded from the sun, and kept damp and moist even during a dry time. Unless the ground is very rich I presume the grass and clover that can be grown between the trees, especially if they are large ones, would hardly be sufficient mulching, and I believe it is sometimes necessary, especially when the trees get large, to bring in spoiled hay, straw, or something of that sort from somewhere else.

On my place in Michigan there was quite a little clover that contained quack grass

that had got into one corner of my farm. The man who took my hay did not want that part, so we hauled two pretty good loads up into my peach-orchard, and that clover hay seems to make the most satisfactory mulching I have ever got hold of. Now, that whole experimental farm is covered with similar object-lessons. Let me give you one more.

#### TOMATOES UNDER GLASS.

A year ago I told you they were having trouble in the greenhouses at Wooster with the white fly. Well, this year they have completely routed the exasperating insect. It was done by the use of hydrocyanic-acid gas. Our readers, especially greenhouse men, are familiar with this gas, so I need not go into details. Well, the experiment station had discovered that this treatment, given when the tomatoes are small, so it can penetrate all around through the dense foliage, is a complete remedy; and I saw the largest crop of tomatoes grown under glass. I was almost tempted to say, that had ever been produced anywhere. By judicious pruning they had succeeded in getting a crop that was just wonderful—great clusters of tomatoes were almost piled one above another. In one greenhouse the plants were set 2 ft. apart each way. Here the tomatoes were fine and extra large. Some of them would be almost too large to bring the best prices in the market. In the house adjoining they had experimented with plants only a foot apart each way. I thought this was altogether too close; but they were tied to stakes three or four feet long, and pruned (as I have explained in a former paper) so as to encourage the best fruiting. In this house there were the greatest number of tomatoes (and largest yield of fruit per square foot), but they were smaller in size, owing to the crowding. They averaged, say, the size of a hen's egg or a little larger, and the shape was very much better than the larger ones in the other house. While I was there, June 18, they were selling the crop at 20 cts. per lb. They said that, heretofore, 2 lbs. per square foot had been considered a fair yield; but it seemed to me there were many places in that bed where there were *four times* 2 lbs. per square foot. Now, some of you mathematicians can figure that out for yourselves. Put it 4 lbs. per square foot. If the same thing could be done outdoors (and I do not see why it could not) just figure up the number of tons you would get per acre. Why, the idea is more fascinating to me than any of your gold-mine or oil-well speculations. Of course, it will take hard, careful work; but we have boys and girls—quite a lot of them—who love and enjoy this kind of hard work more than any thing else in the world. May God be praised for the *possibilities* that our experiment stations are showing us along the lines of "high-pressure gardening."

#### PRUNING TOMATOES TO MAKE THEM SET FRUIT.

Francis Ball, of Jenkintown, Pa., recently showed me a process he had discovered for making rank-growing tomatoes set fruit. While in Florida last winter I had some very thrifty tomato plants in my garden, but all the blossoms dropped off without producing any fruit. My friends on the island, however, told me they would bear fruit later on. Well, Mr. Ball's invention is, that you can make any stem of buds bear fruit if you pinch out the little shoot close to the base of the stem bearing the embryo blossoms. You have got to commence about as soon as the buds or blossoms can be seen. Mr. Ball said he became satisfied the reason why there were no tomatoes was because the plant put all its energies into growing thrifty shoots, letting the blossoms shrivel and fall because they did not get enough nutriment. Taking off this thrifty shoot forces the growth into the buds and blossoms. It was plain to be seen that, where this pinching or pruning had been done, the blossom stem was much enlarged, and showed evidence of fruit. At the present writing I have not had an opportunity to test this matter thoroughly; but I feel sure it will help in getting tomatoes for early market before they would set fruit otherwise.

#### GREENHOUSES COVERED WITH CHEESE-CLOTH INSTEAD OF GLASS.

The plants at four cents each I have mentioned elsewhere (at Geo. W. Park's) are grown in a row of greenhouses covered only with cheese-cloth. This cloth costs so little it is put on new every spring. It is then white and clean, and lets in plenty of light, but cuts off the severe rays of the sun, and gives plenty of ventilation without the necessity of manipulating ventilators. I suppose these cheap houses are vacated when snow and *severe* winter comes on; but Mr. P. says the cheese-cloth will keep out quite a good deal of frost. The slope of the rafters is pretty steep, probably so as to shed rain better, and snow if it should come before the plants are all removed. I should judge the benches are 2½ or 3 feet wide, and the walk perhaps 2 feet. The plants are in two-inch pots plunged to the rim as close as they can stand. These four-cent plants are not "rooted cuttings," but each one is grown in a pot; and, when well rooted, the soil is washed off and the plants are mailed post-paid at this price. I feel sure these cheap cloth-covered greenhouses will prove a great success in growing lots of stuff in mild weather. They can be built of any rough strips of lumber nailed up in the cheapest way, for they are more to protect from the sun, and to preserve a *moist atmosphere* inside than to keep out the cold. You may remember I described, about a year ago, a variety of stuff grown under a cheese-cloth cover at our Ohio Experiment Station that greatly excelled a similar line of vegetables grown near by in the open air.

## Special Notices by A. I. Root.

In speaking of the perennial pea, in Homes, I meant to say that I find this is a near relative of the *Lathyrus silvestris* that was boomed as a forage plant some years ago. In fact, I think I once said the plant was handsome enough, both flowers and foliage, to give it a place as a dooryard ornament. Perennial pea is *Lathyrus grandiflorus*.

The Perfect pamphlet-preserver, which we are advertising on page 972 of this issue, is a very neat and simple binder in which our subscribers can safely preserve several months' copies of GLEANINGS so as to have them handy for reference. The style of binding copies of GLEANINGS is very novel. Simply run a cord through the center page of each number, and fasten this by twisting it around one of the little pegs on the back-board of the binder—an operation which is much more simple than it sounds. The price of one of these binders is 25 cts. You may send your order to us, or direct to the manufacturers, Alden Brothers, Bible House, New York.

### A POCKET TOOL-CHEST.

Several times in years past I have come across pocket-knives with so many tools that they were a sort of pocket-tool-chest; but none of them seemed to be very practical. They have, one after another, gone out of date, so far as I know. Just now I have, however, in my pocket something much better than I have ever gotten hold of before. It is pictured on page 972 of this issue. This arrangement is a little larger than an ordinary pocket-knife. The knife-handle itself makes an excellent handle for a screwdriver or any other tool. It is of good size, easy to grasp; and the best of it all is, the various tools are held in the end of the handle absolutely solid; and from the test given I find them the very best steel and excellent temper. I think the rig would be specially suitable for a bee-keeper, one who runs an automobile, or it is a nice thing to have around the house where you have not a set of good tools handy.

## Golden-All-Over ITALIAN - QUEENS

I have a few choice untested Golden-all-over Italian queens, reared from Pratt stock, by Pratt's methods, and will be able to supply a limited demand for balance of the season at \$1.25 each.

Wm. A. Shuff, Philadelphia, Pa.  
4426 Osage Ave.

## Queens-Italian-Queens

Bred from the old reliable 3-band stock. Great honey-gatherers, gentle to handle, and not inclined to swarm. Prices for the balance of season, 60c each; \$6.00 per doz. Selected untested, 75c each; \$7.00 per doz. Tested, \$1.00 each; one-half dozen, \$5.00. Address all orders to

W. J. FOREHAND, - Ft. Deposit, Ala.

## SUPERIOR STOCK.

I make a specialty of long-tongued Italian red-clover honey-queens. Untested queen, 75 cts. each; ½ doz., \$3.00; tested, \$1.00; ½ doz., \$5.00. Bees for business is my motto.

FRED. LEININGER, Ft. Jennings, O.

## Marshfield - Hives - and - Sections

kept in stock; none better. DITTMER'S foundation and all kinds of bee-keepers' supplies sold right. Thousands of shipping-cases, 24-pound, 13 cts.; fancy white basswood, 16 cts, HONEY and BEESWAX wanted. Send for free list, and save 20 per cent on your order.

W. D. Soper, Route 3, Jackson, Michigan

## BANKING BY MAIL

Depositors in all parts of the country find our method of sending deposits by mail satisfactory in every way, for the reason that they not only receive

## 4 PER CENT INTEREST

but they obtain the greatest safety by having their money in the care of a responsible and safe banking institution.

Our booklet describes our methods and management, and explains the advantage of our simple banking-by-mail system. Write for the booklet to-day.

## THE SAVINGS DEPOSIT BANK COMPANY

MEDINA, OHIO

A. T. SPITZER, Pres. A. I. Root, Vice-pres.  
E. B. SPITZER, Cashier.

## WISCONSIN - BASSWOOD

### FOR SECTIONS

We make them and the very best of Dove-tailed Hives, Shipping-cases, and a full line of Bee-keepers' Supplies always on hand. We make very prompt shipments. Let us hear from you.

Marshfield Manufacturing Company  
Marshfield, Wisconsin

## Golden and Leather- colored Italian Queens

MONTHS .....	BEFORE JULY 1			AFTER JULY 1		
NO. QUEENS ...	1	6	12	1	6	12
Untested .....	\$ 1.00	\$ 5.00	\$ 9.00	\$ .75	\$ 4.00	\$ 7.00
Warmed. Tested	1.25	7.00	13.00	1.25	7.00	13.00
Tested .....	1.50			1.50		
Select Tested ..	2.00			2.00		

Breeders, \$5.00. Caucasian queens will be ready to mail July 1. Untested, each, \$1.00; six for \$5.00. Warmed tested, each, \$1.40; six, \$8.00. We have three yards—two Italian and one Caucasian—and mean to meet the trade. Prices on nuclei on application.

D. J. Blocher, : Pearl City, Ill.

# HOW TO KEEP BEES

By Anna Botsford Comstock

A charmingly written manual describing clearly and in detail the outfit, first steps, and methods. The author's well-known literary ability has combined with her enthusiasm for a subject to produce a very unusual volume. It is a handbook for those who keep bees for happiness and honey, and incidentally for money. It serves as well as an introduction to the more extended manuals already in the field.

"I had another of my happy surprises when Mr. Boyden put in my hands a pretty book with the above title. My first thought was that we had almost enough bee-books already; but when I noticed this one was written by a woman, and a noted woman too, I began to turn over its pages. . . .

"Finally, with all due deference to the authors of the excellent books on bee culture which we have already, my opinion is that this new book, 'How to Keep Bees,' is the best one for a beginner, or one who does not wish or expect to keep more than a dozen colonies, that has yet come before the world."

—A. I. Root, in *Gleanings*, July 1, 1905.

From a typographical standpoint one could hardly desire a better book. The cloth cover is a warm brown with lettering in white. The book is printed on fine paper; large clear type and ample margins; 32 full pages of splendid photographic illustrations; coming from the press of Doubleday, Page & Co. is a guarantee of best workmanship.

The price is \$1.00, postage 10 cts. extra. We make a special combination offer of GLEANINGS one year and the book postpaid for \$1.75. For sale by most dealers in bee-keepers' supplies. . . . .

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**The A. I. Root Company**  
Medina, Ohio

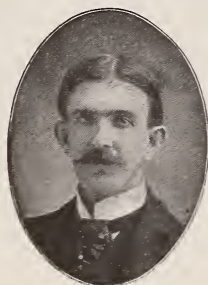
**"If Goods are wanted quick, send to Pouder."**

**Established 1889**

# Bee-Keepers' Supplies

Distributor of Root's Goods from the best shipping-point in the Country. My prices are at all times identical with those of The A. I. Root Company, and I can save you money by way of transportation charges.

**New Metal-spaced  
Hoffman Frames  
are Here in Stock**



**Headquarters for the  
Danzenbaker  
Hive**

**Dovetailed Hives, Section Honey-boxes,  
Weed-process Comb Foundation,  
Honey and Wax Extractors, Bee-smokers,  
Bee-veils, Pouder Honey-jars, and,  
in fact, Every Thing used by Bee-Keepers.**

## **BEESWAX WANTED!**

I pay highest market price for beeswax, delivered here, at any time, cash or trade.  
Make small shipments by express; large shipments by freight.  
Always be sure to attach name to package.

**Catalog Free**

**Walter S. Pouder**  
**513-5 Massachusetts Av., Indianapolis, Ind.**

# Bee = keepers!

Are you aware that we are manufacturers, and can supply you with every thing you need in the apiary?

## Good Goods, Low Prices and Prompt Shipments

are the **POINTS** in our favor. Our customers say so. Convince yourself by sending us your order. Ask for our free Illustrated Catalog and Price List.

**Page & Lyon Mfg. Co., New London, Wis.**

### **Montana, Minnesota, Dakota, and Western Wisconsin Bee-keepers!**

You can save freight by ordering of the St. Paul Branch. We have a complete stock of bee-keepers' supplies. Write at once for catalog and obtain our early-order discounts.

**BEEES AND QUEENS**—Orders booked now for spring delivery.

**HONEY AND WAX**—We handle honey and wax. Write for particulars.

### **The A. I. Root Co.**

Northwestern Branch,  
1024 Mississippi Street,

J. C. Acklin, Mgr., **St. Paul, Minn.**

## **DO YOU KNOW**

That the sale of Dittmer's Foundation has increased so much that we were forced to double our melting capacity in order to fill orders promptly?

### **There is a Reason for This**

It is because Dittmer's Foundation is tough, clear, and transparent, and has the natural color of beeswax.

#### AGENTS FOR DITTMER'S FOUNDATION:

W. D. Soper.....Jackson, Mich.  
Bee and Honey Co.....Beeville, Texas  
E. H. Taylor....Welwyn Sta., Herts, Eng.  
E. Grainger & Co.....Toronto, Ont., Can.

Our warehouse is well stocked with all kinds of bee-keepers' supplies.

Beeswax always wanted.

**Gus Dittmer, Augusta, Wis.**

# BEE-SUPPLIES

We manufacture every thing needed in the apiary, and carry a large stock and great variety. We assure you the best goods at **LOWEST PRICES**, and our excellent freight facilities enable us to make prompt shipment over fifteen different roads, thereby saving you excessive freight charges as well as time and worry in having goods transferred and damaged. We make the Alternating, Massie, Langstroth, and the Dovetail hive.

Our prices are very reasonable; and, to convince you of such, we will mail you our free illustrated and descriptive catalog and price list upon request. We want every bee-keeper to have our catalog. **SPECIAL DISCOUNTS** now. Write to-day. Address

**Kretchmer Mfg. Co., Council Bluffs, Iowa.**

Muscatine Produce Co., Muscatine, Iowa.  
Trestler Supply Co., Lincoln, Nebr.

Shugart-Ouran Seed Co., Council Bluffs, Iowa.  
T. B. Vallette & Son, Salina, Kansas.



## Michigan Distributors

—FOR—

**G. B. Lewis Co.'s Beeware,  
Dadant's Foundation.**

With an enormous stock, and the best shipping-point in Michigan, we are in a position to give you the very best service.

**ADVANCED BEE-VEIL.** Cord arrangement, absolutely bee-proof, best on earth. Made of imported French tulle veiling. Cotton, with silk face. **50 CENTS, POSTPAID.**

*A. G. Woodman Co., Grand Rapids, Mich.*

*Dear Sirs:*—Your advanced bee-veil just arrived, and is, as advertised, the best on the market. Find enclosure for ten more veils. Platteville, Wis., April 14, 1906. N. E. FRANCE.

**A. G. Woodman Co.,**  
Beeswax Wanted. Grand Rapids, Mich.

## Is 25 per cent on Sections worth Saving?

If it is, you should write us before buying. We not only make the **BEST SECTIONS**, but our patented specially constructed machines, built exclusively for us, enable our sections to be folded without wetting. That means 25 per cent less breakage, and consequently 25 per cent saving to you. Our prices are no higher than others. Let us quote you. Special prices on immediate orders.

## Minnesota Bee-supply Company

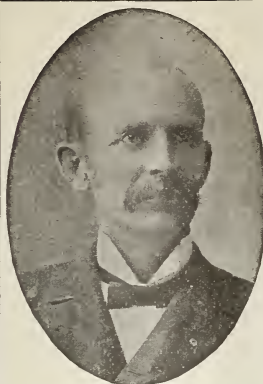
**John Doll & Son, Proprietors**

**Nicollet Island, No. 20, Minneapolis, Minnesota**

## Bee Supplies. Lewis' Goods at Factory Prices.

Best of everything the bee-keeper needs. Large and complete stock. Fine Italian and Caucasian queens. Prompt service. Catalog free. Get our prices before ordering.

**C. M. Scott & Co., Indianapolis, Indiana**  
1004 East Washington Street



Established 1881

YES!

Same Place 1906

## THIS IS THE MAN WHO HAS HANDLED ROOT'S GOODS ALL THESE YEARS

and is now selling at wholesale and retail at Root's catalog prices. He has carloads of the finest sections, of all kinds and sizes; the Danzenbaker hive, the best single-walled comb-honey hive in use; all kinds of single-walled hives shown in catalog, and supers that match; the Hilton double-walled hive, of which more are used in Michigan than any other. It has stood the test for thirty years. We can't name them all, but send for his 36-page illustrated catalog, and that will tell it all and give prices. Cash or goods in exchange for beeswax at all times of the year. ♣ ♣ ♣ ♣ ♣

Geo. E. Hilton, - Fremont, Mich.

## FIRE - SALE - OF - BEE-SUPPLIES

Come and see the goods before buying, if you can. It will pay you, as you will  
**SAVE 25 TO 50 PER CENT**

As announced last week, a fire which caused almost a total loss occurred June 20, in the building we then occupied. We are now in our new quarters—191 and 193 SUPERIOR STREET (two blocks north and one block east of our old location)—where we've the slightly damaged goods that we have sorted out, and also a stock of  
**NEW LEWIS GOODS AT FACTORY PRICES**

Any bee-keepers living within a reasonable distance of Chicago can make money on any supplies he may need now or later, by coming to Chicago and looking over the goods that we selected out after the fire. Better order quick if you want any of the goods we are selling at twenty-five to fifty per cent reduction.

Send for free catalog of new goods. Address

**H. M. Arnd, Propr. York Honey & Bee Supply Co.** (Not Inc.)  
Long Distance Telephone, North 1559. 191 and 193 Superior St., Chicago, Ills.

**BINGHAM**  
Original  
Direct Draft  
CLEAN  
Bee Smokers



Pat'd 1878, '82, '92 & 1903

## Pretty Recognition

A lady to whom I sent a Smoke Engine to order per mail sent this delicate recognition, "I am pleased," and signed her name.

We have made hundreds of thousands of smokers in the last twenty-eight years. They always please and last; don't spit fire; don't go out; don't daub themselves all over. We are the most extensive exclusively bee-smoker makers in the world.

**T. F. Bingham - Farwell, Mich.**

Chico, California, October 28th, 1905.

Dear Mr. Bingham:—Enclosed find money-order for a honey-knife and smoker. I can't do business without a Bingham Smoke Engine.  
J. M. RANKIN.

## A Fine Lot of Queens

now ready for delivery. Double your crop of honey by stocking your apiary with my queens. That's what many of my customers report they did last year. I am sure my queens will please you. I am a breeder of Holy Lands and Carmiolans. Nuclei and colonies. Large or small quantities.

**PRICES:** Queens, each, \$1.00; six for \$5.00. Breeders, each, \$5.00. Ask for prices on quantity lots.

**W. H. LAWS, Beeville, Bee County, Texas**

# TO SOUTH DAKOTA

## The Land of Bread and Butter.

South Dakota is long on wealth and short on people.

Today it presents the best opportunities in America for those who want to get ahead on the Highway to Independence. More than 47,000,000 bushels of corn, more than 47,000,000 bushels of wheat, live stock to the value of \$41,000,000, hay to the value of \$12,000,000, and products of the mines above \$12,000,000, were some of the returns from South Dakota for 1905. With a population of only 450,000, and the annual production of new wealth above \$166,000,000, it can be readily understood why South Dakota people are prosperous and happy. The outlook for 1906 crops is the best South Dakota has ever known.

Why don't you go there and investigate the openings along the new lines of this railway for yourself?

From Chicago, and from many other points in Illinois, Minnesota, Iowa, and Missouri, direct service to South Dakota is offered via the

## Chicago, Milwaukee & St. Paul Railway

Its main lines and branch lines fairly gridiron the rich agricultural and stock country of South Dakota. Its mileage in South Dakota is more than 1,200 miles, and by the building of extensions is being rapidly increased.

A NEW LINE IS NOW BEING BUILT from Chamberlain, S. D., to Rapid City, S. D., through Lyman, Stanley, and Pennington Counties. Some of the best opportunities for success are along these new lines. The railway company has no farm lands for sale or rent. If you are interested, it is worth while to write today for a new book on South Dakota. It will be sent free by return mail.

**F. A. MILLER, General Passenger Agent,**  
**CHICAGO.**

# Baby Nuclei.

## 2nd Edition.

The second edition of this popular treatise is on the press. This book thoroughly covers the field of small mating under management. The experience of 20 years in mating young queens in baby nuclei is given. A delightful little book—good printing, enjoyable reading and easy understanding. Price 25c postpaid.

**SIMPLIFIED QUEEN-REARING.**—A revised edition of this book just out. It tells the honey producer how to rear queens by the very simplest method ever published. Good queens for little money and little trouble, in just an effective and economical plan for the bee-keeper who works for profit. Price 25 cts. a copy, postpaid.

**INCREASE.**—Don't depend entirely upon swarming for your increase. It's too slow and uncer-

tain. Swarthmore tells of a way in his delightful little book entitled "Increase"—a natural way, simple and safe, no labor, little trouble. Colonies formed on this plan will work like prime swarms, and store a surplus. Price 25 cts. a copy postpaid.

**CELL-GETTING.**—The plan that has revolutionized queen-rearing throughout the world. The entire process is fully explained and illustrated by photos from actual life. Price, postpaid, 50 cents.

## Swarthmore Queen-Rearing Tools.

The simplicity of these devices places the art of queen-rearing in the hands of the average bee-keeper. Every honey-producer can be his own queen-rearer. Full directions go with each outfit. Here is a chance not only to rear your own queen but for your neighbors at a profit.

### Prices of Complete Outfits:

#### **Outfit No. 1--Experimental**

POSTPAID, \$1.50

- |                       |                    |
|-----------------------|--------------------|
| 1 Cell-bar,           | 1 Holding-frame,   |
| 16 Waxed Flange Cups, | 12 Transfer-cages. |

#### **Outfit No. 2--Amateur**

POSTPAID, \$3.50

- |                       |                    |
|-----------------------|--------------------|
| 2 Cell-bars,          | 1 Holding-frame,   |
| 35 Waxed Flange Cups, | 18 Transfer-cages, |
| 1 Needle,             | 1 Cell-stick.      |

#### **Outfit No. 3--Professional**

BY FREIGHT OR EXPRESS, \$7.50

- |                        |                          |
|------------------------|--------------------------|
| 2 Blank bars,          | 2 Cell-bars,             |
| 3 Holding-frames,      | 1 Incubating-cage,       |
| 1 Cage-pocket,         | 1 Grace Cell-compressor, |
| 1 Grafting-plug,       | 100 Flange Cups,         |
| 2 Double mating-boxes, | 2 Swarth. nursery-cages, |
| 1 Bar-holder,          | 24 Transfer-cages,       |
| 1 Swarm-box with lid,  | 1 Needle, 1 Stick.       |

### Prices of Separate parts:

	post. extra
Bar-holder .....	.10
Blank Bar .....	.05
Bottle Feeder .....	.10
Bulb Filler and Feeder .....	.75
16-hole Cell-bar .....	.10
Cage-pocket .....	.25
Flange-cups, unwaxed, 1c each; per 100 ..	.75
Flange-cups, waxed, 2c each per 100 ...	1.75
Grace Cell-compressor, each .....	1.75
Grafting-needle, each .....	.15
Grafting-plug, each .....	.10
Grafting-stick, each .....	.10
Holding-frame, each .....	.10
Incubating-cage, each .....	.35
Double Mating-boxes, complete, \$1.00; 10 ..	7.50
Nursery-cages, complete, waxed cell-cup ..	.35
Nursery-cages, no cups .....	.25
Swarm-box, with lid .....	1.00
Swarm-box, lid only .....	.25
T Stands, each .....	.10
Transfer-cages .....	.10

# The A. I. ROOT CO.

AT ALL BRANCH HOUSES.

FOR SALE BY ALL DEALERS IN BEE-KEEPERS' SUPPLIES.

# PENNSYLVANIA

Ours is the largest bee-supply house in the western half of the State. Every thing which the bee-keeper will need is in stock awaiting your order.

## ROOT'S GOODS AT ROOT'S PRICES

You can save time and expense by ordering from us. .

Best shipping facilities. .

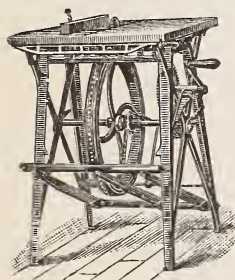
Complete stock. . . . .

Do not put off ordering to-day what you will urgently need a little later on in the season. . . . .

**Frank W. Prothero**

Successor to Prothero & Arnold

Dubois, Clearfield Co., Pennsylvania



### BARNES' HAND AND FOOT POWER MACHINERY

This cut represents our combined circular saw, which is made for bee-keepers' use in the construction of their hives, sections, etc.

#### MACHINES ON TRIAL

Send for illustrated catalog and prices. Address W. F. & JNO. BARNES CO. 545 Ruby Street, ROCKFORD, ILLINOIS.

## SPRAY PUMPS

"TAKE OFF YOUR HAT TO THE MYERS"

**15 YEARS**

The Pump that pumps easy and throws a full flow. The cheapest pump is the best pump, that's a Myers. Pumps, Hay Tools & Barn Door Hangers. Send for catalog and prices.

F. E. Myers & Bro., Ashland, Ohio.



### Deming's Sprayers

are the ideals for many thousand fruit growers. Get the best. Something for every purpose. Knapsack, Hand, Bucket, Barrel, Etc. Also Power Outlets. Every approved device for right working. Agitators, superior nozzles, etc. Send for free catalog. The Deming Co., 230 Depot St., Salem, O. Henion & Hubbell, Western Arts., Chicago.



## Something New in Honey-jars...

Cook's Square Jar combines a new feature that improves the package and reduces the cost, and is the best and cheapest 1-pound glass package made. Send for circular and full catalog of hives, bees, and useful implements. . .

J. H. M. COOK, 70 Cortlandt St., New York

The Oldest Supply-house in the East, and only Reliable goods sold. 10 cents brings sample jar by mail.

## CARNIOLANS our SPECIALTY

WE HAVE been breeding this wonderful race of bees for over twenty years, and during all this time we have been making very careful selections, and we now claim to have one of the best and purest races of Carniolan bees in this country.

They are very gentle, hardy, and prolific; the best of workers; they come out of winter quarters healthier and stronger in bees; they build up very rapidly in the spring, are great comb-builders, and their sealed combs are of snowy whiteness.

### Also Breeders of Golden and Leather Italians

No foul brood or other bee-diseases here. Bees and queens guaranteed to arrive in good condition at your postoffice in the United States or Canada. Descriptive price list free.

PRICES. - Untested queen, 75c; six, \$3.90; doz., \$7.00. Tested, \$1.25. Best breeding, \$2.50. Best imported,

F. A. Lockhart & Co.,

\$4.00. One L-frame nucleus, 75c; two-L-frame nucleus, \$1.50; three-L-frame nucleus, \$2.00. Add price of queen wanted to nucleus. Special prices quoted on large orders to dealers.

### Banater Bees from Hungary

This wonderful new race of bees takes the lead over all other races, all points considered, that we have seen. The three colonies we are testing are strong in bees; do not offer to swarm; are great honey-gatherers; build snowy-white combs, and are very gentle; in fact, no smoke is needed to handle them. They resemble the Carniolans in color, though somewhat darker. We have never seen a race of bees with so many desirable qualities. We shall breed a limited number of queens for sale, and have started a queen-rearing apiary five miles from other bees, and expect to have laying bees ready to mail by July 15. Price \$5.00 each. Pure mating and safe arrival guaranteed.

Lake George, New York

# QUEENS

**By Return Mail at the Following Prices for the Balance of this Season. Golden or Leather-colored Italian.**

Our folks say that your queens are extra fine.

The A. I. Root Co., Medina, Ohio

We have good reports from your stock from time to time.

George W. York & Co., Chicago, Ill.

On every hand I hear good words of Quirin's queens.

B. S. K. Bennett, Los Angeles, Cal.

Your queens did finely. It was one I purchased last year that gave me over 600 pounds of honey.

J. L. Gandy, Humboldt, Neb.

The breeder is surely a very fine one; her daughters do grandly.

Campbell & West, Hartstown, Pa.

I had a queen of your last year which produced bees that beat anything ever seen in this part of the country.

E. L. Messenger, New Haven, Conn.

The nuclei you sent J. A. Adams did just splendidly. Each colony stored at least 75 pounds of honey.

F. P. Merritt, 13 Breckenridge St., Lexington, Ky.

A few years ago I bought a queen from your which proved to be the best I had for years.

H. C. Shirley,

Cashier of Liberty Bank, Liberty, S. C.

I have had the pleasure of seeing the results of your queens at Mr. George W. Stanley's apiary, at Scuffletown, Ky., and that is why I am ordering this half-dozen.

C. W. Brenner, Newburg, Ind.

I bought a queen from a neighbor last year who said he got her from you. She made me 193 sections of honey after July 4th—the best my other queens did was 64 sections.

C. E. Woodington, St. Anne, Ill.

With great respect I write to you in regard to your dealing and queens. If you want any references you can refer to me, as I can't recommend you too highly. Your queens are the best I ever saw. I have one hive of bees among my 45 colonies containing a queen from you that \$50.00 will not buy.

Morris Coon, Route 2, Locke, N. Y.

The two-frame nucleus you sent me was put in a hive May 25th. In July 1 brushed a swarm; had a swarm in August, and took off 75 boxes of honey. I consider this a wonderful record. I had four nuclei from different parts of the country, and yours was far superior to any of them. They are very gentle, easy to handle, hustlers to work. All bees and queens needed by me will hereafter come from Quirin-the-queen-breeder, Bellevue, O.

S. A. Peck, Box 124, Northumberland, Pa.

	1	6	12
Select queens.....	75	\$4 00	\$ 7 00
Tested queens.....	1 00	5 00	9 00
Selected tested queens.....	1 50	8 00	15 00
Breeders.....	3 00	15 00	
Straight five-band breeders...	5 00		

Safe delivery and satisfaction guaranteed of all queens. Any queen not satisfactory may be returned any time inside of sixty days and another will be sent gratis.

Address all Orders to

**Quirin-the-Queen-Breeder**  
Bellevue, Ohio.

**CARNIOLAN and ITALIAN QUEENS!**

Untested, 50 cts. each. Warranted, 75c; tested, \$1.00. None better at any price.

**Grant Anderson - Sabinal, Texas**

**Queens from 50 Cents Up!**

Bred from Root's imported Italians. Write for prices, stating wants.

**C. M. Church, Arnold, Pa.**

## Did you Ever

figure the difference in value between a good queen and a poor one?—one colony which brings in a large surplus, and another which, although you spend much more time on it, does not give you any?

## Extra Honey Queens

give the best results for the least labor, and are therefore a good investment.

### Prices

One.....\$1.00      Six .....\$5.00      Twelve ..\$9.00

**Francis J. Colahan**

**Bernardo, San Diego Co., Calif.**

## COLLINGDALE APIARY

**J. R. Rambo, Collingdale, Delaware Co., Penn.**

Breeder of Caucasian and Golden Italian queens; Italians bred from stock received from Swarthmore; Caucasians bred from an imported queen. Queens reared and mated in separate yards, six miles apart. Satisfaction and safe arrival guaranteed. Prices furnished on application. I am booking orders now for the coming season, and will fill same in rotation as received.

## Tennessee-bred Queens

**From Extra Select Mothers**

Three-band from dark leather imported; Moore's long tongue or my own; Golden from Laws, Doolittle's, or my own; Caucasians and Carniolans from direct imported. No disease. Contracts with dealers a specialty. Apiaries from 3¼ to 7 miles apart. Write name on postal, and get circular and what others say.

**JOHN M. DAVIS**

**Spring Hill, Tennessee, U. S. A.**

## Caucasian - and - Italian Bees and Queens

Mr. Walter S. Pouder, Indianapolis, Ind., June 30, 1906, writes: "Friend T., queen arrived to day in good condition. I consider her a very choice specimen of the Caucasian."

Mr. Frank G. Odell, Lincoln, Neb., writes: "The yellow Caucasian queen you sent us is an unusually fine queen and very prolific. We are very much pleased with her."

I can send such queens for \$3 00 each by return mail. Send for circular and price list.

**A. E. Titoff, Ioamosa, Calif.**

## Quality Queens

Are the Best Italians yet.

Send for circular. ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀

**H. H. JEPSON,**

**182 Friend St., - Boston, Mass.**

**H. C. Simpson, Catawba, S. C.**

Dealer in

**BEE - KEEPERS' SUPPLIES!**

Breeder of Italian bees and queens. Root's Goods a specialty.

## CAUCASIAN QUEENS!

For beginners, the timid, and the city bee-keeper. Not stingless, but gentle. With this race many will master the art of handling bees. I breed HIGH-GRADE ITALIAN QUEENS also. The demand for these queens is great; the supply is limited. Write for particulars today. Address

Robert B. McCain, Yorkville, Ills. R. F. D.

## Superior Queens!!!!

—Before June 15— —After June 15—

Italian and Carniolan		
Untested.....	75c; \$3.00 per doz.	60c; \$6.50 per doz.
Tested.....	\$1.00; 11.00 per doz.	75c; 8.00 per doz.
Select Tested...	1.25; 12.00 per doz.	1.00; 11.00 per doz.
Caucasian		
Untested.....	\$1.00; \$11.00 per doz.	75c; \$8.00 per doz.
Tested.....	1.50; 16.00 per doz.	1.00; 11.00 per doz.
Select Tested...	2.00; 20.00 per doz.	1.25; 12.00 per doz.

Write me a postal card for my circular.

Chas. Koeppen, Fredericksburg, Virginia

## MOORE'S - STRAIN - OF - ITALIANS

as Red-clover Workers.

L. C. Medkiff, Salem, N. J., says: "I bought an untested queen of you last year, and her bees have filled three comb-honey supers, and did not swarm, while thirteen out of the fifteen other colonies did not get more than half that amount.

"I have queens from six different breeders, and I class yours 100 per cent above them all. Your bees worked very strong on the first crop of red clover. I know they were yours, because I floured them with a dredge-box and watched the hive. They also worked strong on the second crop of red-clover and lima-bean blossoms."

Untested queens, 75c each; six, \$4.00; dozen, \$7.50.

Select untested, \$1.00 each; six, \$5.00; dozen, \$9.00.

Safe arrival and satisfaction guaranteed. Descriptive circular free.

I am now filling orders by return mail, and shall probably be able to do so until the close of the season.

J. P. MOORE, Morgan, Pendleton Co., Ky.

## QUEENS DIRECT FROM ITALY

Fine, reliable. English price list sent on application. Beautiful results obtained last year. OUR MOTTO—"Whatsoever ye would that men should do to you, do ye even so to them."

MALAN BROTHERS, Luserna, San Giovanni, Italy.

## Queens - Italian - Queens

and bees from Root's Red-clover stock and Golden Italian queens. Better than ever.

Untested.....60c each; six, \$3.50

Select untested.....75c " " 4.00

Tested.....\$1.00 " " 5.00

Select tested.....1.25 " " 6.00

Two-frame nuclei with untested queen..2.00

Orders filled in rotation. . Send orders to

E. A. Simmons, Greenville, Ala.

## ITALIAN QUEENS

bred from best of honey-gatherers, either three or five banded or Golden races. Untested, 65c each, 3 for \$2.00, 6 for \$3.75, 12 for 7.25; tested, \$1.00 each, 6 for \$5.00, 12 for \$9.00; select tested, \$1.50 each; breeders, \$300 each.

J. W. Taylor, Beeville, Bee Co., Texas

## Orders Filled Promptly by Return Mail

Queens from our fine strain of three-band Italians will not disappoint you. Bees are gentle, and the best of honey-gatherers. Queens are large and prolific, and every one guaranteed. Untested, 50c; \$6.00 per dozen. Tested, \$1.00.

J. W. H. SHAW & CO.  
Loreauville, Iberia Par., Louisiana

## Rose Lawn Queens.

Italians - Carniolans - Caucasians.

We thank our friends for the liberal patronage extended to us, and beg to announce that we are prepared to fill orders promptly after July 1.

Our prize offer on honey production still stands, and will be extended to October 1 for those who wish our "Pure Gold" queens.

We call special attention to our Red Clover Italians and Yellow Caucasians, which are worthy the attention of any progressive bee-keeper.

Prices after July 1:

Italians and Carniolans, select, untested, 75c; six, \$4.00

Caucasians, select, untested, \$1.00, six, \$5.00.

Special prices on larger orders and breeding stock on application. Write for catalog.

Rose Lawn Apiaries, Station C, Lincoln, Nebr.

## The Best Stock

Nice three-banded Italians that are guaranteed to please, or money refunded. The Robey queens now go to nearly all parts of the globe. They are being used by many of the largest honey-producers of this and other countries, who pronounce them to be very superior strain of bees. I have spent 21 years in building up this strain of bees. Warranted purely mated, in any quantity, 60 cts. each; selected warranted, 75 cts. each.

L. H. Robey, Worthington, W. Va.

## Untested Queens!

Golden Italian

75 cts. each; six for \$4.00; an extra fine one for \$1.00. Warranted purely mated and good queens. . . .

J. B. Case, Port Orange, Fla.

## Red-clover Queens from Westwood Apiary

will convince you of their superiority over all others. One, two, and three frame nuclei a specialty; also full colonies. Price list sent on application.

Henry Shaffer . . . . . Westwood, Ohio

## From Long-tongued Imported Italians.

Untested, 75c; \$7.50 per dozen. Tested, \$1.25;

\$12.00 per dozen. Breeders, \$2.00 to \$3.00.

Postal orders drawn on Decatur, Michigan.

E. E. MOTT, Glenwood, Mich.

## MOORE'S LONG-TONGUES and GOLDENS

Select untested queens. 75c; six, \$4.00; twelve,

\$7.50. Tested, \$1.25; six, \$6.00. Twelve, \$11.00.

Best breeders, \$2.50. Safe arrival guaranteed.

W. H. Rails, - - - Orange, Calif.



## Red Clover and Italian Queens.

Untested, 65 cts.; 2, \$1; tested, \$1.00.

Select tested, \$1.25; 4-frame nuclei in a nice painted hive, and tested queen, all for \$3.75. "Your bees are swarming on my red clover fields," says G. W. Slaybaugh, York Springs, Pa.

G. ROUTZAHN, Biglerville, Pa.

1906 Italian and Caucasian Queens. Price list now ready. Write E. E. LAWRENCE, Doniphan, Mo.

# BEES and QUEENS

**BY RETURN MAIL.**

**The Three-banded  
Long-tongued Strain  
of Italians.**

We are breeding exclusively the above strain of bees, as from years of experience we consider them the best all-round bees that can be had. We have been making, from time to time, very careful selections for the following

## Superior Qualities.

Honey-gathering, size of bees, non-swarming, docility, uniform markings.

Our selection of bees awarded diploma at the PAN-AMERICAN EXPOSITION for being the best bees there. And we guarantee them the equal of any bees anywhere at any price

## Quality Our Motto.

1300 colonies to select from.

Untested queens.....	75c; 6, \$4.25; 12,	8.00
Select untested queens.....	1.00; 6, 5.00; 12,	9.90
Tested queens.....	1.00; 6, 6.00; 12,	11.50
Select tested queens.....	1.50.	
Breeding queens, \$3.00 to \$5.00.		

Yours for best service,

**The Victor-Knolle Apiary Co.,  
Hondo, Texas.**

## Golden Queens.

My goldens are yellow from tip to tip. Every queen is worth a dollar, but I have a large number of them and offer them cheap. One, 65 cts.; 3 for \$1.95; 6 for \$3.75; 12 for \$7.50. No finer or better queens can be had at any price. They are reared right. Have had 35 years' experience in rearing queens. I insure satisfaction in every particular. Try at least one of my all-golden queens, and see how promptly I can serve you. Send for circular. It's free.

Daniel Wurth, 1111 North Smith St., San Antonio, Texas

## Boston Headquarters

— FOR —

## Bees-Queens-Supplies

**H. H. Jepson - 182 Friend St.**

## Italian Queens of - the - Purest - Strains

I offer this race of queens, bred from select red-clover and five-banded breeders, at the following prices:

Untested, 75c; select untested, \$1.00; tested, \$1.50; select tested, \$2.50. I will guarantee safe arrival and satisfaction.

**H. M. PARKER, Jr.**

James Island, South Carolina

## Italian and Caucasian Queens and Bees



Choice homebred and imported stock. All queens reared in full colonies.

### PRICES FOR JULY

ITALIANS	
One untested queen .....	65
One tested queen .....	90
One select tested .....	1.10
One breeder queen .....	1.65
One-comb nucleus, no queen...	80
Caucasian queens, untested..	1.25
Tested .....	1.75

Safe arrival guaranteed. For prices on quantities, and description of each grade, send for free catalog.

**J. L. Strong, Clarinda, Iowa, U. S. A.**

204 East Logan Street

## Same Old Place

is where you get the best of queens; untested, \$1.00; \$4.25 per 6; \$8.00 per dozen. Tested, \$1.50; best breeders, \$5.00. Absolute satisfaction and safe arrival guaranteed. Carniolans, Cyprians, Holy Lands, Italians.

**The JENNIE ATCHLEY CO.,**

Box 18, Beeville, Bee Co., Tex.

## California Sage Queens

For balance of season choice untested queens, 75 cts. each; six for \$4.00. Good, healthy Italian stock. No small or inferior queens sent out. Circular free.

**J. W. GRIFFIN,**

528 Cladys Ave., Los Angeles, Cal.

## Yellow from Tip to Tip!!!

My Adel bees and queens are very handsome. Every queen a breeder, and guaranteed to produce golden queens and beautiful bees; non-swarmers, very gentle, and hustlers for honey. Each queen, \$1. Catalog ready.

**H. ALLEY, - - Wenham, Mass.**

## MINNESOTA-BRED QUEENS.



Try our Northern-bred queens—nothing finer; three-banded and golden Italian queens, untested, 75 cts.; tested, \$1.50. Hardy and prolific. We want your orders, and will fill them by return mail, and guarantee safe arrival and satisfaction. Write for circular to

**MENNIE & FENTON,**  
Pine Island - Minnesota.

## I. J. STRINGHAM

OF 105 PARK PLACE

## New York

furnishes every thing a bee-keeper uses. Strong colony of bees, with tested Italian queen, in Dov'd hive complete, \$8.00; in a chaff hive, \$9.50. Three-frame nucleus, with Italian queen, \$4.00. Silk-faced bee-veil, 40 cts. postpaid. Italian queens, 85 cts. Catalog of bee-supplies free.

Apiaries, Glen Cove, Long Island.

## Wants and Exchange.

Notices will be inserted under this head at 15 cts. per line. Advertisements intended for this department should not exceed five lines, and you must say you want your advertisement in this department or we will not be responsible for errors. You can have the notice as many lines as you like, but all over five lines will cost you according to our regular rates. This department is intended only for bona-fide exchanges. Exchanges for cash or for price lists, or notices offering articles for sale, will be charged our regular rates of 20 cts. per line, and they will be put in other departments. We can not be responsible for dissatisfaction arising from these "swaps."

**WANTED.**—Bee supplies in exchange for 300 colonies of bees. See ad. elsewhere. Manufacturers write me if interested. LEO F. HANEKAN, Glenwood, Wis.

**WANTED.**—Refuse from the wax-extractor, or slumgum. State quantity and price.  
OREL L. HERSHISER,  
301 Huntington Ave., Buffalo, N. Y.

**WANTED.**—Utah, Nevada, and California honey. We are now contracting with bee-keepers for our year's supply, small lots as well as carload lots. We pay cash, or, to all who prefer, bee-supplies in payment, we give extremely low figures. We have the agency for The A. I. Root Co.'s goods in Utah, and buy by the carload.  
SUPERIOR HONEY CO.,  
F. W. Redfield, Mgr. Ogden, Utah.

## Help Wanted.

**WANTED.**—A man to help us through August at general work among our bees. State wages wanted and what experience you may have had.  
E. W. & F. C. ALEXANDER, Delanson, N. Y.

**WANTED.**—Position in comb, extracted, or queen-rearing yard; 15 years' experience; at present manager of the largest apiaries in Northern California. Reasons for leaving.  
JAMES DUNN,  
Route 1. Vacaville, Cal.

**WANTED.**—A cook in a private family of three. Good home for respectable woman. Good wages paid. Address  
JOHN RICK,  
434 Oley St., Reading, Pa.

## For Sale.

**FOR SALE.**—400 cols. pure Italian bees in lots to suit. Write for prices. F. A. GRAY, Redwood Falls, Minn.

**FOR SALE.**—Bees and bee-supplies.  
J. GOBELI, Glenwood, St. Croix Co., Wis.

**FOR SALE.**—Untested Italian queens at 60c; two for \$1.00; tested, \$1.00 each.  
MRS. J. W. BACON,  
Waterloo, Seneca Co., N. Y.

**FOR SALE.**—500 colonies of bees as soon as 1906 crop of honey is off. Apply to  
W. P. COLLINS, 1112 Pearl St., Boulder, Col.

**FOR SALE.**—Bee-keepers' supplies. Root's goods. Root's prices. Free catalog. F. R. DANIELS,  
117 Florence St., Springfield, Mass.

**FOR SALE.**—My apiary complete in the great irrigated alfalfa belt; no failure yet. See GLEANINGS of Dec. 15, 1903, page 1051. C. K. C., Lovelock, Nev.

**FOR SALE.**—170 colonies of bees in eight and ten frame hives; honey-house on wagon, uncapping-tank, honey-tank, four-frame extractor; mare, colt, horse, cow, 200 chickens, 10 acres of land with improvements.  
Rt. 3. Mrs. T. HARRIS, Visalia, Cal.

**FOR SALE.**—Yellow hybrid queens, 50c each, five for \$2.00. A. RICHTER, Harvey, Cook Co., Ills.

**FOR SALE.**—\$200 will buy 100 full colonies and 10 nuclei, strong; Italians and hybrids.  
G. P. HOWELL, 6101 Dauphine St., New Orleans, La.

**FOR SALE.**—Five acres near Manzanola, Colo.; is improved; half in fruit. Also 70 colonies bees for sale.  
WM. WORDEN, Manzanola, Colo.

**FOR SALE.**—Twenty colonies bees in Danz. hives at \$3.00 each, or \$2.75 each for the lot.  
EDWARD TRENT, Butler, N. J.

**FOR SALE.**—Queens from 50c up. Bred from Root's imported Italians. Write for prices, stating wants.  
C. M. CHURCH, Arnold, Pa.

**FOR SALE.**—Queens. I breed a superior strain of fine golden-all-over Italians. Ask for prices.  
T. L. McMURRAY, Ravenswood, W. Va.

**FOR SALE.**—The Alexander wire bee-veil. The best face-protector on the market. Try one and be convinced. At 75c each postpaid.  
FRANK C. ALEXANDER, Delanson, N. Y.

**FOR SALE.** 275 colonies of bees in good condition. Also can locate you on first-class homestead claim under Gunnison tunnel, one of Uncle Sam's biggest reclamation projects. Address Box 782, Montrose, Col.

**FOR SALE.**—About 300 sixty-pound cans; mostly new, good condition, new cases, two cans to a case; 40 cts. per case, f. o. b. Preston.  
M. V. FACEY, Preston, Fillmore Co., Minn.

**FOR SALE.**—15 queens, Italian hybrids, and a few blacks, either at 25 cts. each. Ready for delivery at once. Get northern stock.  
WALTER NYGREN, Maine, Minn.

**FOR SALE.**—Special sale of sections—Wisconsin basswood—equal to the best, No. 1, \$4.20; No. 2, \$3.70. Root Dovetailed and Danz. comb-honey hives, and all kinds of supplies on hand. Italian queens and bees.  
H. S. DUBY, St. Anne, Ills.

**FOR SALE.**—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1906 send your name and address to  
FRANK S. STEPHENS,  
(Root's Goods.) Paden City, W. Va.

**FOR SALE.**—Bees; the right kind, right prices. Safe arrival and satisfaction guaranteed. Ask for illustrated Outfits for Beginners, price list, and our hints on buying bees. MASON SUPPLY CO., Mechanic F.S., Me.

**FOR SALE.**—Thirty-five colonies bees—part are Italian and part hybrid. Must go; but if not taken in July I must have half the honey. For further particulars see or write, and enclose stamp when writing.  
MRS. ANNA E. CHESTERMAN, Cowden, Ills.

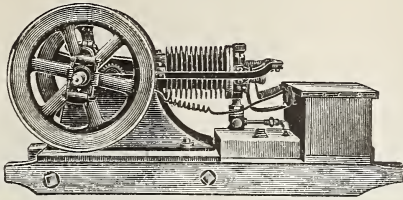
**FOR SALE.**—500 colonies of bees located in the best sweet-clover belt in the U. S. Will take \$1500 for the outfit. Reason for wanting to sell, too much other business. If I do not sell shall want a good man to run them next season.  
W. N. CANNON, Greenville, Ala.

**FOR SALE.**—At a bargain, 300 colonies of bees in well-painted, factory-made, eight frame Dovetailed hives; good strain, no disease. A model outfit. No supers. Can fill orders immediately after Aug. 1. Will sell in lots to suit buyer, or will exchange for stock of bee-supplies. Write for further information.  
LEO F. HANEKAN, Glenwood, Wis.

## Poultry Offers.

**FOR SALE.**—Choice poultry. Ten leading varieties for the farmer or the fancier. Circulars free.  
A. H. DUFF, Larned, Kansas.

**FOR SALE.**—Alger's rose-comb Brown Leghorns hold the world's record; first at Chicago International, St. Louis World's Fair, exposition at Portland, Oregon. Italian bees—Root strain direct Flemish Giant hares, very large. Red Belgians from 16-lb. buck. Get circulars.  
FRED ALGER, Waukau, Wis.



## Power for Extractors.

We have finally found what we have been looking for in a gasoline-engine to run our large-sized honey-extractors. They are very reasonable in price, and simple to operate.

They are economical, using but a quart to a quart and a half of gasoline a day, per horse power.

There is no waste of power, as a sensitive governor cuts out both gasoline and batteries when engines are at their proper speed, and charges are resumed as soon as speed slackens.

As the engines are air-cooled and use no water there is no danger of cracked cylinders in cold weather. They can be operated in any temperature.

They are light in weight, and can be easily moved, and used for a multitude of purposes, as well as for extracting. They are the most satisfactory engines for running cream-separators, churns, fans, sewing and washing machines, ice-cream freezers, meat-choppers, printing-presses, and, in fact, all kinds of light machinery. They are the ideal pumping-engines.

They are made of the best materials, with as careful attention to details as the larger and more expensive engines. Each engine is mounted on a board with tank and battery box, ready to run. They are thoroughly tested before shipping, and fully guaranteed.

Shipping-weight of one-horse-power engine complete, ready to run, 300 lbs. Price \$60, f. o. b. factory in Wisconsin, Medina, or Chicago. In running a large extractor by power the ratio of the gear should be one revolution of the reel to two of the crank-shaft; and in place of the crank a flanged clutch-pulley or a pulley with belt-tightener should be used. These attachments are worth \$5.00. Write for further particulars.

**The A. I. Root Co.,**  
Medina, Ohio.

Perfect? What better can you wish? You can now, by use of the

## PERFECT PAMPHLET RESERVER

them to get it, or write to

BIND

## GLEANINGS AT A TRIFLING COST!

On the shelf it looks just like a book; holds one number or a volume; as simple as tying a shoe. See it at news, book, or stationery dealers. Ask  
**The A. I. Root Company, Medina, Ohio.**

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Twenty-five Years' Practice.

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Patent practice in Patent Office and Courts.  
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Patent counsel of The A. I. Root Co.

## JOSEPH HORNE CO.

Pittsburgh, Penn.

### The Hoe Safety Razor.

All beards are alike to the Hoe, the heavy gristly beard that requires to be reduced every morning, and the light, unnoticeable beard that calls for a shave only twice a week.

The Hoe Safety Razor is by all odds the simplest safety razor on the market to-day, as well as the most perfect. It is composed of three parts, the hoe, the guard, the razor itself; and this razor can be honed when necessary just like any other razor.

It costs only \$1.50, and the price includes half a dozen keen-edged blades, which ought to last any beard a couple of years. Then you can buy more blades.

### No. 602 Bee-keepers' Pocket-Knife Tool Kit.

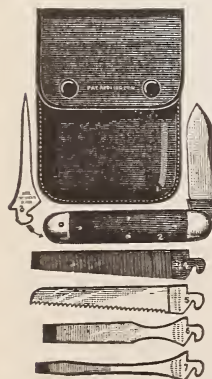
Made in America

Every one has use for a Knife, Reamer, File, Saw, Chisel, or Screwdriver. This outfit is practical, yet so small, being contained in a Leather Pocket-Book 4 1/4 x 3 1/4 inches, is, by carrying it in your pocket, always at hand for immediate use, whether Camping, Boating, Teaming, Driving, in the Shop, Factory, Office Store Warehouse, Automobile, on the Farm, Bicycle, or around the Home.

Any Tool firmly attached or detached to the Pocket-Knife in a second.

Sent postpaid on receipt of price, \$2.25.

Use it five days and if not satisfactory return it and I will refund your money.



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Produces a safe, white, powerful light, brighter than acetylene or electricity. 100-candle power at a cost of 2c per week.

Made in over 100 different styles—every one warranted. Agents wanted. No dirt, smoke, or odor. Everywhere.

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### FENCE Strongest Made

Made of High Carbon coiled wire. We have no agents. Sell direct to user at factory prices on 30 days free trial. We pay all freight. Catalog shows 37 styles and heights of farm and poultry fence. It's free. Buy direct. Write today.

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If you have only a few chickens;  
If you are at all interested in poultry;  
If you are breeding for fancy points;  
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## Ohio Poultry Journal

the paper published in the interest of the farmer, beginner, and small breeder, with plenty of pointers for the experienced fancier. Each month is especially edited for the needs of that special season of the year. Regular price is 50 cts. a year, but we offer it **AT HALF PRICE** for a short time to introduce it to readers of Gleanings. Send only 25 cts. and get it a year; or, if you send us \$1 for a year's subscription to Gleanings in Bee Culture, we will send you Ohio Poultry Journal for a year free. Address Ohio Poultry Journal, Dept. 14, Dayton, Ohio.

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If so, you will find The Poultry Gazette a welcome monthly visitor to your home. A down-to-date, practical poultry magazine that is the acknowledged leader of all Western poultry papers; ably edited; profusely illustrated. Subscribe now, while the price is only 25 cts. a year. If you have poultry to sell, The Poultry Gazette can sell it for you.

The Poultry Gazette, Dept. B, Clay Center, Neb.

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**BEE-SUPPLIES**

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the celebrated Root  
goods to Kansas City

every year, and save hun-  
dreds of dollars for our cus-  
tomers in Kansas, Nebras-  
ka, Missouri, etc. Let me  
save you a few dollars on  
your goods. Write me at  
Main Office. Catalog, in-  
formation, etc., sent free.

**Carl F. Buck**

Augusta      - -      Kansas

**Italian**      **Queens**



Untested Queens, 75 cts. each; six for \$4.25.  
Select Untested, \$1.00.      Tested, \$1.00.  
Sel. Tested, \$1.25.      Breeding Queens, \$3.00.

**Bee-keepers'  
Supplies**

Send for our new revised catalog,  
Root's Supplies are what we handle.  
A full line always on hand.  
We give you prompt service.  
Freight rates are reasonable.

**John Nebel & Son Supply Co.**  
High Hill, Montgomery Co., Missouri

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A complete line of Root's Bee-  
keepers' Supplies. Unexcelled  
shipping facilities for reaching  
the Middle West.

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ALSO MANUFACTURER OF AND DEALER IN

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Low freight.      Prompt shipments.  
Factory prices.      Write for catalog.

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**COLORADO  
BEE-KEEPER**

IS THE man we are interested in,  
whether he has one swarm or five  
hundred. If you are that man, we  
are talking to you.

The goods we sell were made in  
Ohio. You live in Colorado.

The point is this:

We cut out the distance, and bring  
your goods home to you—and they are  
Root's Goods too.

Just now we are interested in get-  
ting our catalog into the hands of  
every bee-keeper. It is YOURS for  
the asking.

Your order to us, small or large,  
means prompt service and Root Goods.

**The L. A. Watkins  
Merchandise Company**  
Denver, Colorado

# The Best <sup>is</sup> Always The Cheapest

**We have been furnishing bee-keepers all over the World with Supplies for over 25 YEARS, and no complaints.**

Our PRICES are as low as any, while the QUALITY of our goods is HIGHEST. Catalog and price list free. We have for 16 years published THE AMERICAN BEE KEEPER, an illustrated 32-page monthly, edited by two of the most experienced bee-keepers in America. Fifty cents a year. Sample copy free.

**The W. T. Falconer Mfg. Co., Jamestown, N. Y.**

## Look, Utah and Idaho

**A Complete Line of The A. I. Root Company's Bee-supplies at Factory Prices**

We have paid the freight to Ogden, and they cost you no more than if you buy them at Medina, Ohio. Do not delay ordering, as the honey-flow is at full blast. We also have all sizes cans and shipping-cases.

**Superior Honey Company, Ogden, Utah**  
F. W. Redfield, Manager

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**Every Inch Equal to Sample**

Beauty! Purity! Firmness!  
No sagging; no loss.  
Twenty-eighth Year.  
We Guarantee Satisfaction.  
Wax Worked into Foundation.

**Bee-supplies of All Kinds**

Beeswax wanted at all times.  
Send for Our 1906 Catalog.

**Dadant & Sons, Hamilton, Ill.**

## Root Goods for the West

New catalog now ready to mail. Write to-day.  
Remember I have been in the business over 20 years, and carry the largest stock in the West. Many thousands of dollars' worth of goods now on hand ready for distribution.

Why put up with inferior goods when you may as well have the best? They cost you no more. In many cases I can save you money. In all cases I give the most for the money, quality considered.

They are the ROOT GOODS, which I sell here at ROOT FACTORY PRICES and DISCOUNTS. My shipping facilities are unsurpassed anywhere. Practically all points are reached by direct lines, thus insuring the lowest freight rates.

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